DE GRUYTER
MOUTON

Horst Lohnstein,
Antonios Tsiknakis (Eds.)

VERB SECOND

GRAMMAR INTERNAL AND GRAMMAR EXTERNAL INTERFACES

INTERFACE EXPLORATIONS

Verb Second

Interface Explorations

Editors
Artemis Alexiadou and T. Alan Hall

Volume 34

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Grammar Internal and Grammar External Interfaces

Edited by
Horst Lohnstein, Antonios Tsiknakis

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ISBN 978-1-5015-1658-0
e-ISBN (PDF) 978-1-5015-0814-1
e-ISBN (EPUB) 978-1-5015-0804-2

Library of Congress Control Number: 2019946316

Bibliographic information published by the Deutsche Nationalbibliothek
The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available on the Internet at http://dnb.dnb.de.

Typesetting: Integra Software Services Pvt. Ltd.
Printing and binding: CPI books GmbH, Leck

www.degruyter.com

Preface

The present volume is a collection of contributions which emerged from four International Workshops on Verb Second held at the University of Wuppertal in the years from 2015 to 2018. Leading researchers and young scholars in the field were invited and presented talks from various perspectives on the phenomenon of verb second and the left sentence periphery. A rich array of central topics have been discussed concerning various verb second constructions in the historical varieties and the synchronic state of the Germanic and Romance languages: main clause phenomena in general, the syntax of verb second and its interfaces to inflectional morphology, to semantics and to discourse pragmatics, the role of verb second in second language acquisition as well as language processing from a psycholinguistic perspective. The theoretical assumptions are mainly related to the framework of generative grammar, but also go beyond the area of narrow syntax. In particular, assumptions about the cartographic structure, the connection between higher ordered structures and anchoring principles of clauses, the formal semantics of declaratives, interrogatives and imperatives as well as verbal mood (subjunctive vs. indicative) in the Germanic and Romance languages.

The meetings took place in a pleasant and friendly atmosphere providing enough time to discuss the particular issues with due diligence leading to an intensive exchange of new ideas from the different perspectives on the central topic of the workshops: verb second.

We are very grateful for the support granted by the Universtiy of Wuppertal and the financial contributions, without which the workshops could not have taken place in the way they did. Furthermore, we would like also to deeply thank the participants of the workshops for their stimulating and inspiring talks, continuative questions, enlightening comments, and all the valuable contributions to the discussions: Elzbieta Adamczyk, Chiara De Bastiani, Leah Bauke, Josef Bayer, Janina Beutler, Andreas Blümel, Carsten Breul, Nicholas Catasso, Katarina Colomo, Carsten Dahlmann, Constantin Freitag, Ulrike Freywald, Hans-Martin Gärtner, Edward Göbbel, Roland Hinterhölzl, Joachim Jacobs, Stefanie Jansen, Birte Kellermeier-Rehbein, Ans van Kemenade, Cathy Lange, Jürgen Lenerz, André Meinunger, Natascha Müller, Astrid Niebuhr, Peter Öhl, Svetlana Petrova, Cecila Poletto, Natascha Pomino, Sarah Pottgießer, Esther Tabita Rath, Marga Reis, Benjamin Richarz, Gisa Rauh, Joachim Sabel, Christopher Saure, Katrin Schmitz, Dennis Schwuchow, Frank Sode, Nathalie Staratschek, Naomi Schmidt, Johanna Stahnke, Vilma Symanczyk Joppe, Sonja Taigel, Frederik Terboven, Hubert Truckenbrodt, Susanne Uhmann, Dennis Wegner, Pia Wurm.

https://doi.org/10.1515/9781501508141-201

We are looking forward to further successful and enlightening meetings and workshops to clarify the problems connected with verb second in more depth in order to understand the language faculty in this domain a little bit better.

Horst Lohnstein & Antonios Tsiknakis
Wuppertal, February 2019

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Horst Lohnstein and Antonios Tsiknakis

Form and function of verb second – an overview

As the title of the volume (a proposal from Josef Bayer) indicates the verb second phenomenon and its connections to the various components of linguistic and extra-linguistic knowledge shape the content of the contributions contained in this collection. The syntactic properties of the verb second phenomenon is related to aspects of morphological marking (tense and mood) together with their semantics, the connection to the context of discourse as well as to the relationship with the illocutionary force and the sentence mood in root vs. embedded clauses are taken into consideration.

The label "verb second (V2)" signifies a phenomenon which can be observed at the left periphery of (root) clauses in the Germanic as well as in some other languages like Kashmiri, Himachali, Breton, Estonian (Jouitteau 2010, Holmberg 2015). English is a language in which the phenomenon does not show up consistently, but only in certain cases. It is therefore called a residual V2-language (Rizzi 1990b). However, Old English is an SOV language with verb second in main clauses (van Kemenade 1987, Hinterhölzl & van Kemenade 2012). Among the Romance languages present day Rhaetoromance show the V2-property as well (Poletto 2002, Benincà & Poletto 2004, Poletto 2014), but the pattern is also proven with respect to the diachronic variants of the Germanic and Romance languages in general (Holmberg 2015, Axel 2007, Axel-Tober 2012, Poletto 2014, Petrova 2018).

Since Hooper & Thompson (1973) embedded (or dependent) verb second constructions are investigated with respect to the verb classes (classes A to E) which provide the higher ordered structures of the respective verb second constructions. Further research was provided by Reis (1997, 2016), Romberg (1999), Meinunger (2004, 2007), Freywald (2016a,b) for the German cases, Hrafnbjargarson & Wiklund (2009), Gärtner (2003), Gärtner & Eythórsson (in press) for Icelandic, Heycock (2006, 2017), Wiklund et al. (2009), Bentzen (2014) for wider areas of the Germanic languages.

Since verb second has effects on various levels of linguistic description and because it is not at all clear to which extend its properties are determined by phonological, morphological, syntactic, semantic or even pragmatic knowledge, a broad variety of perspectives were assembled in order to further clarify the exact nature of the particular components. The problem is that "we may make an intuitive judgment that some linguistic expression is odd or deviant. But we cannot

Horst Lohnstein, Antonios Tsiknakis, University of Wuppertal

https://doi.org/10.1515/9781501508141-001

in general know, pretheoretically, whether this deviance is a matter of syntax, semantics, pragmatics, belief, memory limitations, style, etc." (Chomsky 1977: 4). It is therefore a matter of analysis and theoretic reconstruction which may lead us to a proper understanding of the nature and quality of the linguistic configurations that interact and come along with the V2-phenomenon.

One specific aspect of the theoretical analysis consists in the task to connect the respective components of *form* and *function* at the proper linguistic levels. This means that a division of labour is required to trace back the aspects of the phenomenon to other parts of linguistic knowledge which may be distributed throughout the various components of knowledge of language. As already Kuno put it: "Given a linguistic process that is governed purely by syntactic factors, this process will be described in the syntactic component of the grammar both by pure syntacticians and by functional syntacticians. On the other hand, given a linguistic process that is governed by both syntactic and, say, discourse factors, the syntactic aspect will be formulated in the syntactic component, while discourse factors that interact with this syntactic characterization will be described in, say, the discourse component of the grammar. Pure syntacticians would concentrate on the former characterization, and functional syntacticians, on the latter. There need not be any disagreement between the two" (Kuno 1980: 117f.).

To connect the various systems of linguistic knowledge the notion *interface* deserves some consideration. Different domains of knowledge have to be connected via interfaces, if their contents have different representational formats, but depend on each other. An interface is to be understood as a component which takes information of a specific form from one domain and makes it interpretable in another domain. It thereby connects knowledge of different types so that the informational flow from one domain to a different one can be accomplished. "If language is to be usable at all, its design must satisfy an 'interface condition' IC: the information in the expressions generated by L must be accessible to other systems, including the sensorimotor (SM) and conceptual-intentional (C-I) systems that enter into thought and action. We can therefore restate the deeper 'why-question'. Insofar as properties of L can be accounted for in terms of IC and general properties of computational efficiency and the like, they have a principled explanation: we will have validated the Galilean intuition of perfection of nature in this domain" (Chomsky 2001a: 2). Seen from this perspective, the connections to other parts of the language system need to be specified by *grammar internal interfaces* which enable information from one level of linguistic description to another. Furthermore, the connection between the linguistic and the conceptual-intentional system together with its representation of extra-linguistic knowledge of discourse representation and information states of the participants in a conversation needs to be taken into account. This requires *grammar external interfaces* which connect the information

provided by the clausal content with the information available in the discourse context. As the research on verb second has revealed since Hooper & Thompson (1973), a notion closely related to *assertion* (as opposed to *presupposition*) is at stake in the scope of information states of the participants and their respective commitments in a discourse situation. In particular, the principles of anchoring root clauses in the discourse seems to require an interface which connects propositional objects like declaratives, interrogatives, imperatives, or other sentence moods to the various information states available in the discourse context.

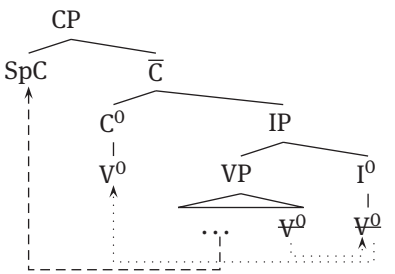
The verb second phenomenon itself consists in the fronting of the finite verb to the left clausal periphery and the positioning of one [±wh]-phrase out of a wide range of categories in front of that verb.

Main clause formation requires the fronting of the finite verb throughout the Germanic languages—with English as an exception. The classical analysis assumes the left clausal periphery to be a plain CP (Chomsky 1986). In a structural configuration like this, the finite verb enters the C^0-position if a complementizer is not present and some maximal projection XP enters the Spec position of the CP deriving the verb second word order as den Besten (1983) proposed for Dutch and German. The XP may be marked by a [+wh]- or a [–wh]-feature leading to different sentence moods—interrogative vs. declarative (Brandt et al. 1992, Lohnstein 2000, Truckenbrodt 2006).

If the position in front of the finite verb is left empty, a verb first (V1) clause results. The talks at the workshops took these assumptions as a starting point and developed further issues and theroretical ideas based on the huge area of empirical evidence.

The classical analysis builds on the $\overline{\text{X}}$-assumptions of functional categories proposed by Chomsky (1986) in combination with den Besten's (1977/1989: 89f.) theory about the complementary distribution of complementizers and finite verbs in modern German and Dutch:

(1)

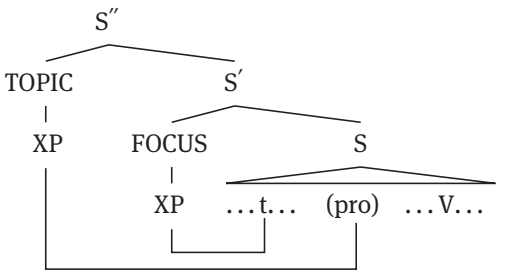


These patterns are already attested in Old High German (OHG) as Axel (2009: 36f.) points out: "In OHG, the SpecC position was already targeted by different types

of XP movement. For example, there are uncontroversial cases of operator movement attested, i. e. fronted wh-phrases and fronted focused XPs. Furthermore, the SpecC position often hosted topicalized constituents."

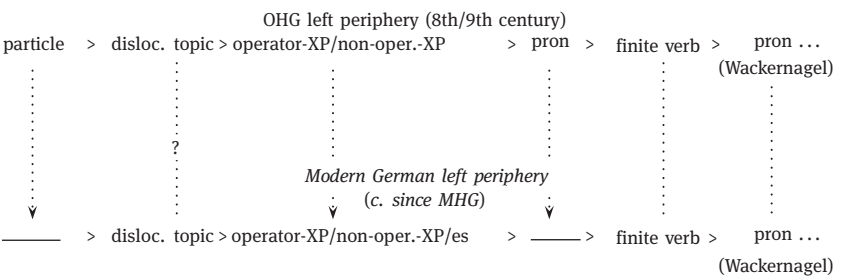
These observations fit the research of Kiparsky's (1995) reconstruction of the Indo-European clausal structure quite well, for which he tries "to relate the Germanic system historically to the Indo-European one, arguing that the Germanic innovations result from the rise of embedded finite clauses" (Kiparsky 1995: 153). In doing so, he distinguishes two left-peripheral operator positions, the inner of these hosts focal elements like wh- or focused phrases, while the outer projection hosts topic elements. Kiparsky furthermore points out that there was no CP, since complementizers did not exist. As a consequence, embedding was not a structural option. These considerations led him to assume the following phrase structure of Indo-European (Kiparsky 1995: 153):

(2)



Building on this structural configuration, Axel-Tober (2018) develops a derivation from OHG to Modern German (Axel-Tober 2018: 43):

(3)

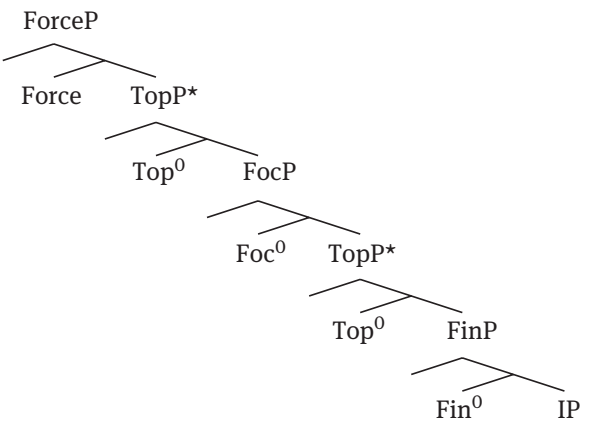


The dotted arrows indicate diachronic developments, while the dotted lines signify persistently existing structural positions. In particular, the position of the left peripheral particles marking sentence moods disappeared together

with the whole class of these elements. In contrast to this development, the left peripheral position for a dislocated topic appears to have survived and allows for an interpretation as a position for left dislocated elements in modern German. These matters are not conclusively clear though, as the question mark indicates. As opposed to Old English, the positions for [+wh]-operators and their [–wh]-counterparts seem to be identical in OHG as well as in modern German. Topologically speaking, this position in OHG can be interpreted as the precursor of the prefield in the modern German clause structure. Beside constituents of nearly every type, this position allows the insertion of the expletive [–wh]-Topic-*es* as Lenerz (1985: 113) points out. This grammatical option opens up the syntactic potential of verb second word order justifying declarative clauses in general. The fronting of the finite verb, which appears to be moved throughout the OHG period to the left peripheral (C^0-) position, together with the occupation of the German prefield (SpC-position) by a [±wh]-phrase seems to adopt the function of the mood marking particles in the left peripheral position. "[T]here are residues of a system of sentence particles in the early OHG texts (the interrogative particle *inu/eno*, the affirmative particle *jâ/ja* and the imperative particle *nû/nu*)" which discriminate sentence moods by these particles. In Middle High German (MHG) the use of *inu/ina* as a question particle (Axel 2007: 41), and the affirmative particle *jâ/ja* (Axel 2007: 56ff.) vanished, although they survived as particles with other communicative functions. A similar development happened to the imperative particle *nû/nu* (Axel 2007: 41). On its way from OHG to the modern system the distribution of the finite verb was employed increasingly in the various syntactic *sentence types* (verb first, verb second, and verb final) to characterize the semantic category of *sentence mood*. The loss of the particles appears to go hand in hand with options of occupying the German prefield. Although the verb second pattern exists broadly, verb initial declaratives appear in the OHG period too, as demonstrated by Petrova (2018). The constraint that exactly one constituent can occupy the prefield position (SpC) appears to be a process which became stable in the MHG period as Speyer & Weiß (2018) point out. In modern German, wh-interrogatives and declaratives receive their interpretation in strict dependence on the [±wh]-feature of the prefield phrase yielding the verb second word order. In the case of yn-interrogatives this position remains empty leading to the verb-first construction.

The left periphery of the Romance languages, especially Italian, received another analysis under a cartographic perspective. As originally proposed by Rizzi (1997) the left clausal periphery is analysed as a more fine grained structure. Rizzi (1997: 297) proposed a structural configuration along the following lines:

(4)



Two recursively organized sequences of topic projections are assumed which build the surroundings of a focus phrase. The whole structural complex is dominated by a force projection.

Rizzi's proposal unleashed a controversial debate about the exact makeup of the fine left peripheral structure. As opposed to Rizzi's assumptions, Benincà & Poletto (2004: 53) first of all deny a recursive structure allowing a virtually infinite set of identical topic phrases and, secondly, they deny the existence of topic projections below focus. They argue that all projections lower than topic have the properties of focused elements showing the typical behaviour of operators too. Along these ideas, the left periphery of Italian clauses contains two fields: a higher Topic field and a lower Focus field. Both fields allow a more fine grained subdivision in the sense of the following exposition (Benincà & Poletto 2004: 71):

(5) [HT [Scene Sett. [LD [LI [$_{\text{CONTR.CP}_1}$ adv/obj, [$_{\text{CONT.CP}_2}$ circ.adv. [$_{\text{INFORM.CP}}$]]]]]]]

Frame — Theme — Focus

Topic

The Topic field is further subdivided into subclasses of elements with specific semantic-pragmatic properties. According to that, an interesting point made by Benincà & Poletto (2004: 52) consists in the assumption that there is a one-to-one relation between the syntactic position in the CP domain and their semantic-pragmatic function. The frame field, which contains the proper topic together with the "where and when" specifications of the clause are higher in the structure than the theme field. Although the authors concede that more research needs to be done on these topics, the analysis given so far opens up an interesting research area, which connects the left periphery of the clausal structure to the conditions provided

by knowledge in the discourse context and matters of the speaker's and hearer's consciousness. In a follow up work Poletto (2014) builds on a refinement of (5) in Benincà (2006) and argues that V2 as movement to the C-domain in main clauses (and a subset of embedded clauses) is already a syntactic option of Old Italian (OI) allowing for the classification of OI as a verb second language.

In Frascarelli & Hinterhölzl (2007) Rizzi's proposal is also modified. In accordance with Rizzi, Frascarelli and Hinterhölzl assume a recursive topic projection FamP below the focus projection which hosts constituents representing familiar information. But in line with Benincà & Poletto (2004), the authors deny the recursive character of the topic projection situated above the focus projection. Instead, they assume a projection ContrP for contrastive topics and a projection ShiftP for aboutness topics which are hierarchically arranged as illustrated in (6) (Frascarelli & Hinterhölzl 2007: 97):

(6) ⋯ [ShiftP [ContrP [FocP [FamP* ⋯]]]]

The cartographic approach originated from the consideration of data from the Romance languages. But it is also applied to other languages like for example German. Grewendorf (2002, 2013) adopts the model in (4) proposed by Rizzi (1997) almost unmodified for the analysis of German language phenomena. In Grewendorf (2013: 661) only an additional projection WhP located between FinP and the lower TopicP for [+wh]-elements in embedded clauses is assumed.

By comparison, Frey (2006) proposes a reduced structure of the left periphery. Instead of the topic projections proposed by Rizzi in the classical CP domain, Frey (2004, 2006) argues for a topic projection at the left edge of the classical IP domain which is located above the base position of sentence adverbials. Thus, the classical CP is split into the three functional projections CP, ContrP and FinP (Frey 2006: 254):

(7) [CP [ContrP [FinP ⋯]]]

According to Frey (2006), there are three ways to occupy the sentence initial position of verb second clauses in German. Firstly, through base generation of certain adverbials in SpecC which cannot appear in the IP domain unless in parenthetical use (8.a). Secondly, through an operation called "formal movement" which takes the highest element from the IP domain and places it to SpecFin without any interpretative effect (8.b). Frey adopts this operation from Fanselow (2002).[1]

1 The proposal originally stems from Bhatt (1999) for Kashmiri.

Finally, movement of a focussed phrase to the specifier position of ContrP which leads to a contrastive interpretation of the dislocated item (8.c):

(8) a. Ein Glück habe ich den Schirm mitgenommen
a luck have I the umbrella with-taken
'Luckily I have taken the umbrella with me.'

b. Es$_1$ wird t$_1$ morgen wahrscheinlich regnen
it will tomorrow probably rain
'It will probably rain tomorrow.'

c. [Den HUND]$_1$ hat Peter t$_1$ gefüttert (und nicht die Katze).
the dog has Peter fed (and not the cat)
'Peter has fed the dog (and not the cat).'

Internal interfaces of the left periphery

In German and Dutch, the distribution of the finite verb is rather strict. In complementizer introduced (embedded) clauses the finite verb is in final position, while in clauses without a filled C-position the finite verb has to occupy it, as den Besten (1983) proposed. According to his analysis, German and Dutch are assumed to be OV-languages with Infl in final position and Comp in the initial position. Arguments against these assumptions are inter alia brought forward by Haider (2010), who argues that finiteness in clause final position in German is not a grammatical option. Furthermore, $\overline{X}$-theory and the analysis of head movement (Travis 1984, Baker 1988) gave rise to the assumption that in the case of relative and embedded [+wh]-interrogative clauses the head position C^0 of the C-projection remains empty. In these cases, the [+wh]- or relative expression is a maximal projection which is banned from head positions and should be located in the specifier position as $\overline{X}$-theory wants it to be. A consequence of these theoretical assumptions consists in the fact that clauses exist in German and Dutch which have an empty C^0-position. Thus, under the assumptions of $\overline{X}$-theory and principles of head and phrasal movement a complementary distribution of complementizer and finite verb turns out not to exist.

Moving further towards in the theoretical developments of syntactic structure building, assumptions based on the 'bare phrase structure'-theory (Chomsky 1995) assume that a movement operation takes an element α from inside a derivational object Π and adjoins it under the extension condition to Π yielding [αΠ]. The reason for movement in general is assumed to consist in the necessity

to check a strong feature preventing it from reaching the PF-interface. Since the derivational objects are built bottom up, there are no positions available which bear such a feature and which could serve as a landing site for head movement. In particular, a preexisting position C^0 to which the finite verb could move does not exist. Considering this factor, Fanselow (2004: 30) assumes: "V2 movement is triggered by the simultaneous presence of a strong feature to be checked (say, a feature checking finiteness) and the matching feature (fin) on the finite verb. This constellation leads to a convergent derivation only if the finite verb moves within its own projection, to check the feature." For this reason, the analysis is called *Münchhausen-style* movement.

Another way to capture the fronting of the finite verb might be to disregard head movement at all and moving a remnant vP instead. An analysis of this sort is proposed by Müller (2004). The innovative idea consists in a single movement operation of a remnant vP as in (9.b) instead of the two operations head- and XP-movement as in (9.a):

(9) Müller (2004: 180, 182):

a. [$_{CP}$ Das Buch$_2$ [$_{\overline{C}}$ hat$_3$-C [$_{TP}$ Fritz$_1$ [$_{vP}$ t$_1$ [$_{VP}$ t$_2$ gelesen] t$_3$] t$_3^*$]]]
the book$_{acc}$ has Fritz$_{nom}$ read

b. [$_{CP}$[$_{vP5}$ Das Buch$_2$ t$_1$ t$_4$ hat$_3$] [$_{\overline{C}}$ C [$_{TP}$ Fritz$_1$ [$_{\overline{T}}$ [$_{VP4}$ t$_2$ gelesen] [$_{\overline{T}}$ t$_5$ T]]]]]
the book$_{acc}$ has *Fritz$_{nom}$ read*

While in (9.a) two movements take place, the derivation of the V2-construction in (9.b) involves only one fronted category—a remnant vP that is reduced to its edge domain. The element in the position in front of the finite verb is bound to occur at the left edge of vP in an earlier stage of the derivation – "this will typically be a subject NP or an adverb, but, after scrambling, it may also be an object NP, a PP, a CP, or a VP (complete or remnant [...])" (Müller 2004: 182f.) According to this account one v-projection which contains the finite verb and—in order to get the verb second effect—another XP from the edge of vP is fronted to the left periphery as a whole expression. No separation of head- and XP-movement is assumed by this kind of analysis. A critical discussion of the proposed assumptions is given by Biberauer & Roberts (2004).

Besides the properties of verb second in root clauses, the phenomenon has also been observed in embedded clauses. Two kinds of variation are distinguished: *unrestricted V2* which refers to languages which have the finite verb fronted in all (root and embedded) finite clauses and *restricted V2* which refers to V2-languages which have V2 only in main clauses (Holmberg & Platzack 1995, Vikner 1995). Holmberg (2015: 356) calls the former kind of languages I-V2, while

the latter V2-languages are called C-V2 "reflecting the hypothesis according to which the former languages are V2 by virtue of V-to-I movement (at least in embedded clauses), the latter by virtue of V-to-C movement". Other pairs of terms in use for naming this opposition are *asymmetrical* vs. *symmetrical* V2-languages or *restricted* vs. *general* V2-languages. But as Holmberg (2015: 356ff.) points out, there are exceptions both ways. This means that on the one hand, there are embedded contexts in unrestricted V2-languages which do not license V2 and on the other hand, there are embedded contexts in restricted V2-languages in which V2 is possible. A restricted V2- language is for example Frisian, a verb final, but C-initial language. Although the complementizer is present, in certain embedded environments it shows V2 similar to the Mainland Scandinavian languages *Danish*, *Swedish* and *Norwegian* which are VO-languages. These environments can be related to the verb classes proposed by Hooper & Thompson (1973) (cf. Wiklund et al. 2009, Heycock 2017). *Unrestricted (or general) V2* shows up in Yiddish and Icelandic. The finite verb is fronted in all environments, even though a complementizer is present (Diesing 1990, Iatridou & Kroch 1992, Santorini 1995, Vikner 1995, Holmberg & Platzack 1995). But at least in Icelandic there are some exceptions to this generalization in relative and adverbial clauses in which V2 is not obligatory (Holmberg 2015: 357). In any case, Icelandic seems to be a special case. Gärtner & Eythórsson (in press) distinguish two variants: Icelandic A and Icelandic B. While the former variant shows a wide distribution of embedded V2, in the latter variant embedded V2 is restricted to certain environments like in the Mainland Scandinavian languages. Gärtner and Eythorsson label these variants as *broad* vs. *narrow* and try to trace the effect back to an interaction between verbal mood with V2: While verbal mood is dominant wrt. the illocutionary impact of V2 in the broad variant (Icelandic A), it is not dominant in the narrow one (Icelandic B).

In German an asymmetry exists between verb second and verb final complement clauses concerning the fronting of [±wh]-phrases. While a [+wh]-phrase may introduce both, a verb second (10.a) and a verb final complement clause (11.a), a non-relative [–wh]-phrase can only introduce a verb second clause (10.b), but not a verb final complement clause (11.b):

(10) a. Wann kommt der Weihnachtsmann?
when comes the Santa
'When will the Santa come?'

b. Morgen kommt der Weihnachtsmann.
tomorrow comes the Santa
'The Santa will come tomorrow.'

(11) a. Maria sagt, wann der Weihnachtsmann kommt.
Maria says when the Santa comes
'Maria says when Santa arrives.'

b. *Maria sagt, morgen der Weihnachtsmann kommt.
Maria says tomorrow the Santa comes

Tsiknakis (2016, 2017, this volume) develops a system with interacting features which allows for the prediction of the distributions in (10) and (11). Interestingly, the situation seems to be just the other way around with embedded verb second clauses (Reis 1985, Müller & Sternefeld 1993, Jacobs 2018, this volume). While embedded verb second with a [–wh]-phrase in the left periphery is well formed (12.a), a [+wh]-phrase in this position is ungrammatical (12.b):

(12) a. Maria sagt, morgen kommt der Weihnachtsmann
Maria says tomorrow comes the Santa
'Maria says that Santa will come tomorrow.'

b. *Maria sagt, wann kommt der Weihnachtsmann.
Maria says when comes the Santa

Freywald (2009) observed that in spoken German V2-clauses occur with the concomitant effect that they are introduced by the complementizer *dass*. The pattern, which is well known from adverbial (causal, concessive and adversative) clauses and V2-relative clauses (Gärtner 2001), seems to appear with complementizer introduced complement clauses as well, although not in the written language. Scrutinzing these constructions in more detail, Freywald argues that the combination of matrix and dependent clause is a paratactic connection. This kind of analysis was originally proposed by Gärtner (2001, 2002). However, the complementizer *dass* serves as a marker for *assertion* as Freywald shows convincingly—while V2-complement clauses allow for an assertive or a non-assertive reading, *dass*-V2-clauses can under no circumstances be non-assertive. The overt realisation of *dass*—so the argument goes—corresponds in a parallel fashion to an abstract illocutionary operator π_{ASS}, which does not appear in the other cases. This element is the head of an assertion phrase πP as Freywald (2009: 128) suggests:

(13) a. $[_{\pi P}CP_1\ [\overline{\pi}\ [\pi_{ASS}\ \textit{dass}]\ CP_2\ ]]$ – *dass*-V2-construction
b. $[_{\pi P}CP_1\ [\overline{\pi}\ [\pi_{ASS}\ \varnothing]\ CP_2\ ]]$ – V2-complement clause

Note that in both cases CP_2 is a V2-clause. This analysis leads to the assumption that two complementizer positions have to be distinguished in German.

Similar assumptions about different empirical phenomena are proposed by Hinterhölzl (2017). He distinguishes a *high* vs. a *low* position as landing site for the finite verb. The structural configurations he employs for his analysis differs from Freywald's in (13), since he assumes the cartographic representations proposed by Frascarelli & Hinterhölzl (2007) and Speyer (2008). However, with respect to the left peripheral positions for the finite verb, Hinterhölzl's analysis is comparable to Freywald's, in that the higher V_{fin} position is located in ForceP, which is a more abstract characterization of π_{ASS} (cf. Hinterhölzl 2017: 213):

(14) [ForceP (Frame) [FinP ((Subj) Vfin) ...]]
[ForceP (Subj / Frame) (Vfin) [FinP ...]]

The square brackets in these representations indicate syntactic constituents, while the round brackets indicate prosodic constituents. In how far the position occupied by the complementizer in (13) shares the (semantic-pragmatic) properties of the position of V_{fin} in the second structure in (14) remains to be clarified.

A similar structural configuration is proposed by Wolfe (2016) based on assumptions from Biberauer & Roberts (2015). Considering the evolution of Romance clause structure, he proposes an analysis which also assumes a high position in the Force projection as well as a low position in the Fin projection:[2]

(15) [FrameP __ [ForceP ___ [TopP __ [FocP __ [$_{FinP}$ **XP** [Fin^0 **V**] [TP ...]]]]]]
[FrameP __ [ForceP **XP** [$_{Force}$0 **V**]... [$_{FinP}$ ~~XP~~ Fin^0 ~~V~~ [TP ...]]]]]]

2 However, as Wolfe (2016) notes, the Fin-V2 and the Force-V2 states are just follow up stages in the development of the Romance sytem, which starts from the period of Classical Latin. The system changes in a four step sequence as Wolfe (2016) points out:

i. [ForceP **Force^0** [FinP **Fin^0** [vP **v^0** [VP **V^0**]]]]

In the Classical Latin period, the first stage, which is itself an innovation of a V-in-situ system, the finite verb targets v^0 from its base position V^0. On the second stage (attested in late Latin and Old Sardinian) the verb moves to Fin^0. Stage three is characterized by the Fin-V2-grammar, and on the fourth stage the system is Force-V2 with verb movement and obligatory phrasal XP-movement into the Force-field.

The interface to morphology

The relationship between syntax and morphology has been discussed under several perspectives. Travis (1984: 131f.) introduced the *head movement constraint* to account for the movement of V into INFL, and INFL into Comp. In its general formulation it allows a head to move only into a position from which it properly governs the previous position, i. e. into the next higher head position. Through this restriction Travis derives the fronting of the finite verb through two movements: First, V^0 moves into $INFL^0$, then $INFL^0$, which now contains I^0+V^0, moves into $Comp^0$.

Baker (1985: 375) formulates the *mirror principle* which requires morphological derivations to directly reflect syntactic derivations (and vice versa). Especially in the case of finite verbs with separated inflectional markers, the mirror principle predicts a correlation between the sequence of the morphemes—that means: *tense*, *mood*, and *agr*—and certain reflexes in the hierarchy of the syntactic structure corresponding to this sequence.

Holmberg & Platzack (1995: 43) assume an abstract feature [±F] of finiteness. It can be located together with the feature [±T] for tense under the same functional head or they can be realized under different functional heads. In verb second languages [+F] is in C^0 and [+T] is in $Infl^0$. Consequently, in verb second languages like German or Swedish, where [+F] is located in C^0, the verb moves to C^0 in main clauses, but remains in $Infl^0$ in embedded clauses, if the C^0 position is filled by a lexical complementizer. The word order differs with respect to the main vs. embedded distinction. As opposed to these languages, English and French do not show different orders with respect to the location of [+F], because they both have [+F] in Infl. Therefore, the finite verb stays in $Infl^0$ and is not required to move to C^0. Accordingly, no word order variation results. The fact, that English exlusively allows for auxiliaries in I^0 is traced back to Pollock's (1989: 404) assumption "that English has a nonlexical counterpart of *do*, call it, ø, which shares with it all its defining properties except its lexical character."

Based on observations and assumptions like these, Holmberg & Platzack (1995: 44) propose the verb second parameter which captures the property whether [+F] can be located in C^0 or not:

(16) ±([+F] is located in C^0)

Considering the position of finite verbs in Icelandic vs. Swedish, inflectional morphology appears to have further influences on word order. While in Icelandic the finite verb precedes the adverb position in embedded clauses, this is not

an option in the Mainland Scandinavian (MSc.) languages, while it moves to I^0 in Icelandic (Holmberg & Platzack 1995: 75). The loss of the agr-features in the MSc. languages seems to be responsible for this difference. The observation that a verb with a rich agreement morphology appears further to the left led to investigations of the connection between V-to-I-movement and the inflectional richness of the verbal paradigm. It has been scrutinized further by Rohrbacher (1999), then criticized by Bobaljik (2000) and rehabilitated by Koenemann & Zeijlstra (2014) under the label *Rich Agreement Hypothesis (RAH)*. RAH treats questions of V-to-I-movement, which seems to depend on some metric of rich morphology, but V-to-C-movement depends on finiteness irrespective of overt inflectional marking, so RAH only indirectly contributes to the verb second phenomenon.

Looking at the features which take part in the movement of the finite verb, (Bayer 2010, this volume) proposes convincing arguments that movement of the verb to the left does not occur for reasons of the verbal features, but instead for reasons connected with the finiteness features. Thorough investigation of, for example, negative polarity items (NPI) reveals that a finite verb which is itself an NPI like German *(nicht) brauchen* (*(not) to need*) has to be reconstructed into its base position at the level of LF in order to be c-commanded by the negation:

(17) Karl$_2$ braucht$_1$ t$_2$ die Katze nicht zu füttern t$_1$
Carl needs the cat not to feed
'Carl doesn't need to feed the cat.'

Although the verbal features are required to be in the verb final base position at LF, the finiteness features need to be in the left periphery carrying the verb—as generalized pied piping—with it. Since finiteness is composed of *tense*, *mood*, and *agr*, an investigation of the properties of these categories in connection with the verb second property appears to be reasonable.

In the case of tense, Reichenbach (1947) proposed a system, which distinguishes three times: S the *time of speech*, E the time of the *expressed event*, and R a *reference time*. The interpretation of tense in root clauses depends on the time S of the speech situation. Thus, interpreting a tense requires access to the discourse in which the utterance of a finite clause has taken place. A similar analysis can be given for verbal mood, which connects the situation of the expressed event with the situation of speech. This relation can be an indirect one, if (reportive) conjunctive 1 is used to signal that another situation of speech is being referred to. In the case of imperatives the agr-features [person: 2, number: α plural] are identified with relation to the addressee in the

discourse situation. It is therefore a relevant task to scrutinize the properties of the inflectional categories of finiteness and their relation to the projection of syntactic structures on the one hand and their relatedness to components of the discourse context on the other hand. In line with these properties, Lohnstein (2019, 2020) proposed a theory which connects the fronting of finiteness to the interpretation of the (deictic) components of these inflectional categories in the C-interface (Rizzi 1997). In particular, the finiteness features *tense*, *mood*, and *agr* are assumed to be responsible for the fronting of finiteness. This approach takes the deictic variables of the finiteness component to be the trigger for fronting the finite verb. The subcomponent *tense* contains a variable for the *speech time* and the subcomponent of *mood* contains a variable for the *speech situation*. Both variables lack (semantic) values unless they are moved to left peripheral interface in order to get access to the discourse components: *time of speech* and *situation of speech*. In the case of imperatives which are neither marked for tense nor for mood (an imperative is assumed to be a semi-finite form with person- and number-markings only) fronting of the semi-finite verbs occurs, because the agr-features not being valued by a lexical subject get their value from the discource situation too—to be more precise, from the addressee. Lohnstein's approach assumes semantic variables to be the driving force for fronting finiteness. A consequence of this approach consists in the effect that clauses with a fronted finite verb are anchored in the discourse situation—the typical property of root clauses.

Bianchi (2003) introduced the notion "Logophoric centre" in order to relate features of finiteness, especially number and tense features for the licensing of independent subjects and the logophoric anchoring of the clause. Both features do not occur in infinite clauses. This leads to the effect that neither independent subjects can be licenced nor can these clauses be connected with the discourse situation.

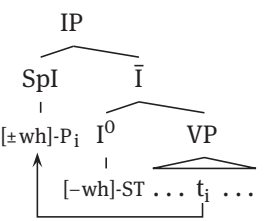
The interface to semantics

It was proposed in the literature that head movement does not have any semantic impact (Chomsky 1995: 345f.). Chomsky (2001b) and Boeckx & Stjepanović (2001) assume head movement to occur in the phonological component only and is therefore completely dismissed from narrow syntax. Given the T-model of generative grammar, operations (after spell out) on the level of PF do not have any effect on the level of LF delivering the input for semantic interpretation. With regard to verb movement, this may be true in terms of truth conditional semantics, since there are no circumstances describable by a verb second clause which are not describable by a verb final clause and vice versa.

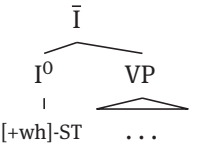
This renders these clauses semantically equivalent. However, there are differences in meaning with the effects of influencing the discourse participant's information states as described in more detail in section *The interface to the discourse*. V2-movement as pure PF-movement is associated with the claim that fronting of the finite verb has no effect at the level of Logical Form (LF) and hence, no semantic consequences. This corollary appears too strong as considerations about sentence mood (the semantic side of sentential force) turns out. In particular, the constitution of sentence moods, which have first been analysed for German in a consequent fashion by Altmann (1987, 1993) requires syntactic, morphologic and semantic notions in order to be properly described. One component of a sentence mood theory is, of course, the position of the finite verb in the left clausal periphery. Although it is possible to restrict the focus to syntactic mechanisms of movement of the finite verb and [±wh]-phrases, the phenomenon in its entirety cannot be well understood if the aspects of declarative, interrogative, or imperative meaning components are ignored. As Altmann (1987) already noted, verbal mood, intonational patterns, lexical markings etc. depend on and interact with the components of syntactic structure building leading to the respective function types with their specific semantic and pragmatic properties.

Scrutinizing sentence moods from a theoretical perspective, Brandt et al. (1992) proposed a compositional system of the left periphery which makes crucial use of two types of wh-features: a [±wh]-P-feature for phrasal categories yielding [±wh]-phrases, the other a [±wh]-ST-feature for marking the clause type in order to distinguish between interrogative and declarative clauses as first proposed by Katz & Postal (1964). Brandt et al. (1992) propose a hybrid difference hypothesis about the possible clause structures in German. According to this approach, German verb first and verb second clauses are $\bar{I}$-projections and verb final clauses are matching projections of the categories C and I equipped with the respective feature configurations (Brandt et al. 1992: 32f.):

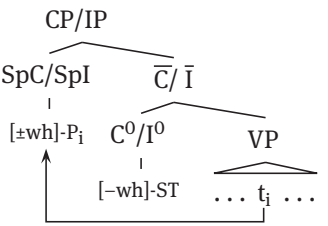
(18) a. verb second declarative ([–wh]-P)/ wh-interrogative ([+wh]-P)



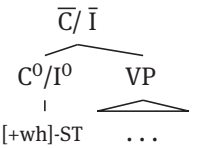
b. verb first yn-interrogative



c. verb final declarative ([–wh]-P)/ wh-interrogative ([+wh]-P)



d. verb final yn-interrogative



The [±wh]-ST-features and the [+wh]-P-feature are interpreted on the semantic level (Brandt et al. 1992: 36ff.).[3] While the [–wh]-ST-feature expresses the virtual existence of an event that instantiates the proposition articulated in the V, the [+wh]-ST- and the [+wh]-P-feature express that the event which instantiates the proposition needs to be specified with respect to the invariant part of the [+wh]-phrase.

Investigating sentence moods in German further, Lohnstein (2000, 2007, 2019, 2020) proposed a compositional and derivational theory of sentence moods which characterized the semantics of the elementary building blocks of sentence moods, and derived main aspects of their interpretation through systematic interaction of the regular grammatical means. Verbal mood, fronting of finiteness, and occupation of the first clausal position by a [±wh]-phrase enter into a complex interaction from which the semantics of interrogatives, declaratives, and imperatives are derived. Especially the existence of the event as representation of the declarative sentence mood in the approach of Brandt et al. (1992) turns out to be a semantic consequence about the existence of an Austinian topic situation.

Another kind of analysis which intends to capture a semantic motivation of verb movement has been put forward by Truckenbrodt (2006), Sode & Truckenbrodt (2018) and Sode & Truckenbrodt (this volume). While Truckenbrodt (2006) assumes context indices in the left clausal periphery with a special markup (DEONT and EPIST), Sode & Truckenbrodt (2018) and Sode & Truckenbrodt (this volume) assume two silent C-elements, each of which can appear in the left periphery of clauses: "informally WANT<x,t,w>[±origo] and BEL <x,t,w>[±origo], where <x,t,w> is an anchor, WANT vs. BEL have bouletic vs. doxastic modal interpretation, and [±origo] specifies whether the anchor is identical to the context of Kaplan, which is close to Bühler's origo" (Sode & Truckenbrodt

3 In contrast to this, Brandt et al. (1992: 37) assume that the [–wh]-P-feature in SpecI and verb movement is reconstructed at the LF level and therefore has no semantic effect.

2018: 91). Especially for the analysis of the inflectional category *verbal mood* they add a feature [origo] to $WANT_{x,t,w}$ or $BEL_{x,t,w}$ respectively. This measure ensures that propositional contents can be assigned to a different situation of speech than the current one. Conjunctive 1 is a mean to signal exactly this relation. This analysis, furthermore, shows that a connection between an inflectional category (verbal mood) interacts in systematic ways with the syntactic process of verb movement. The authors argue that the fronting of the finite verb is necessary in order to satisfy conditions required by the left peripheral C^0-element. In particular, V-to-C movement is triggered through an agree relation between a *probe* in C and the verbal mood of the finite verb as the *goal*.

Similar to Sode & Truckenbrodt's (2018) approach, Sigurðsson (2011), Sigurðsson & Maling (2010) assume so called C/edge linkers: "speaker", "hearer", "X-Topic" which can probe for first, second, and third person pronouns respectively. For instance, the Λ_A feature can probe for a first person pronoun, the Λ_P feature for a second person, and Top feature for a definite third person pronoun in the T-Domain. They get valued as Λ_A (which binds the logophoric agent), Λ_P (which binds the logophoric patient), and Top which binds the contextually addressable topic. Sigurðsson (2011: 282) formulates the relevant condition in the following way:

(19) *C/Edge-Linking Generalization*
Any definite argument, overt or silent, positively matches *at least* one CLn in its local C-domain, CLn ϵ {Λ_A, Λ_P, Top, ‴ }.

The C/edge linkers are silent components which share some general properties with Truckenbrodt's (2006) context indices and the silent C^0-elements of Sode & Truckenbrodt's (2018). Although the features differ, the general idea is similar in that silent elements at the left periphery are responsible for the connection between sentence internal components and specifications in the discourse context. The left periphery of Sode & Truckenbrodt's (2018:cf. 120, 122) theory contains a silent C^0-element yielding the [C [c_i][pref][origo], §], while in Sigurðsson's (2011) approach the silent components from (19) are assumed to settle in the left clausal periphery. Both theories rest on these assumptions in order to connect properties of grammatical units inside the clause with values from a structure of a higher order.

Tsiknakis (2016, 2017, this volume) also presents a feature driven theory of the V2-phenomenon. In addition to a [Q]-feature, which—similar to the [±wh-ST]-feature in Brandt et al. (1992)—distinguishes declarative and interrogative clause types, he proposes a left peripheral clause type feature [F1] which triggers the fronting of the (indicative) finite verb and a clause type feature [F2] which is

responsible for the topicalization of a non-relative [–wh]-phrase to the sentence initial position. In contrast to the [Q]-feature the features [F1] and [F2] have no effect on the interpretation of the descriptive content of the clause but are interpreted on a separate meaning dimension which defines the context change potential of the clause in a compositional manner. (For more details see below.)

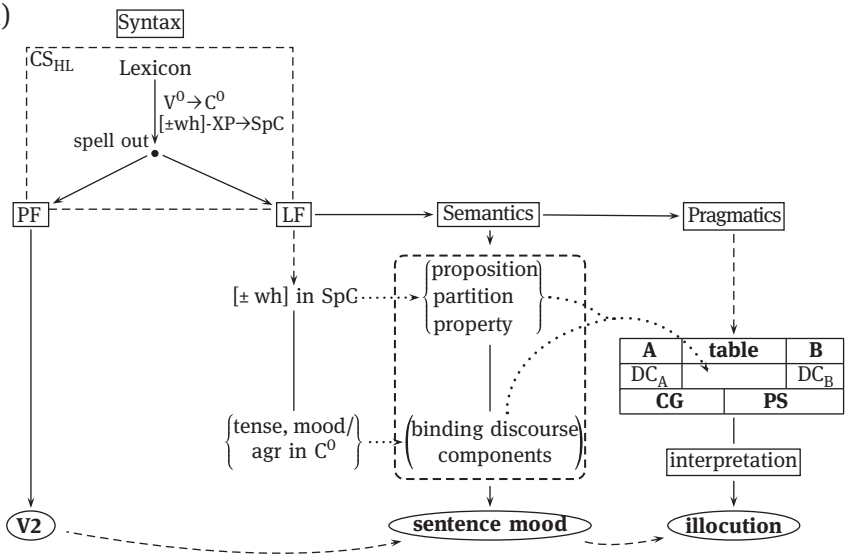
Another approach proposed by Lohnstein (2019, 2020) employs the semantic properties of the inflectional features of *tense* and *mood* in order to reconstruct the anchoring of propositional objects. According to this theory, the deictic variables of tense and mood need access to the left peripheral C-system in the case of finite clauses, while in the case of the (semi-)finite imperative the *agr*-features *person* and *number* identify the addressee of the discourse situation. Seen from this perspective, the left-peripheral CP is assumed to be an interface in the sense of Rizzi (1997: 283):

(20) We can think of the complementizer system as the interface between a propositional content (expressed by the IP) and the superordinate structure (a higher clause or, possibly, the articulation of discourse, if we consider a root clause). As such, we expect the C system to express at least two kinds of information, one facing the outside and the other facing the inside.

The finite verb fronts for reasons of the inflectional finiteness features only. The subcomponent *tense* contains a variable for the *speech time* (cf. Reichenbach 1947) and the subcomponent of *mood* contains a variable for the *speech situation*. Both variables lack semantic values unless they are moved to left sentence periphery in order to get access to the discourse components in the sense of (20)—*time of speech* and *situation of speech*. In the case of imperatives, which are neither marked for tense nor for mood (an imperative is assumed to be a semi-finite form (cf. Donhauser 1986) with person- and number-markings only), fronting of the semi-finite verb occurs, because the agr-features not being valued by a lexical subject get their value from the discourse situation too: the addressee. These processes anchor the propositional object corresponding to the respective root clause to the discourse context. A general property of this theory consists in the fact that no silent left peripheral material is necessary in order to derive the fronting of the finite verb and the fronting of a [±wh]-phrase together with adequate semantic representations of the corresponding sentence moods. The interaction between verbal mood, the [±wh]-phrase, and the fronted (semi-)finite verb leads to the respective semantic objects: reduced bipartitions for *declaratives*, unmodified bipartitions for *yn-interrogatives*, differentiated biparitions for *wh-questions*, and properties of situations with the addresse as agent for *imperatives*.

The general picture of this theory is given in (21) (cf. Lohnstein 2019, 2020):

(21)



The syntactic component is modeled as the minimalist program (Chomsky 1995) imagines it to be. The verb second phenomenon is visible at the level of PF, while at LF the wh-feature and the inflectional features appear. The occupation of the speficier of CP with a [±wh]-phrase or its non-occupation leads to different semantic objects: proposition, partition, property, while the binding of the deictic variables to the components of the discourse situation—time of speech, situation of speech, addressee—anchor the respective object in the discourse situation. This process of anchoring a semantic object in the discourse situation is modeled here as putting it on the discourse table in the sense of Farkas & Bruce (2010). The details of this model are outlined in the subsection *The interface to the discourse* below. In the interactional setting of the discourse situation the respective semantic objects receive their illocutionary interpretation.

All the approaches discussed in this section collect a lot of evidence proving that semantic and pragmatic aspects of verb second clauses indeed take place and show a rather strict correlation between the syntactic operations of fronting the finite verb and semantic-pragmatic effects. Assumptions about verb second as a pure PF-phenomenon do not seem to be able to account for properties of these kinds.

External interfaces of the left periphery

The interface to pragmatics

Since Emonds (1970) and Hooper & Thompson (1973) the V2-property is assumed to be a root phenomenon being interpreted as a kind of assertion. As Hooper & Thompson (1973: 473) put it: "The assertion of a sentence may be identified as that part which can be negated or questioned by the usual application of the processes of negation and interrogation. [...] It will be seen that there is a striking correspondence between various grammatical processes which are explainable in terms of assertion and the applicability of RTs." [RT = root transformation in the sense of Emonds (1970)] However, they do not give a precise definition of assertion nor do they refer to speech act theory (Austin 1962, Searle 1969), where these notions receive a more accurate determination. This situation is characterized by Heycock (2006: 190) as follows: "It is a general problem for work in this area that definitions given are vague and independent evidence for the validity of the concepts used often weak."

Assertion is a notion from speech act theory founded by Austin (1962) and further developed by Searle (1969). Searle (1975: 12) characterizes an assertion in the following way: "*Assertives*. The point or purpose of the members of the assertive class is to commit the speaker (in varying degrees) to something's being the case, to the truth of the expressed proposition. All of the members of the assertive class are assessable on the dimension of assessment which includes *true* and *false*. Using Frege's assertion sign to mark the illocutionary point common to all the members of this class, and the symbols introduced above, we may symbolize this class as follows:

$\vdash\downarrow B(p)$

The direction of fit is words to the world; the psychological state expressed is Belief (that *p*)." Searle uses Frege's judgment dash (representing the speaker's judgment about the truth of the proposition) in combination with the symbol ↓, which signals the direction of fit from the words to the world.

Along this way of characterising assertions, Wechsler (1991: 182) in direct reference to Searle (1969) claimed that

(22) All C"[FIN] clauses are direct or indirect assertion clauses.

Wechsler suggests that even embedded clauses with the finite verb fronted into the C-System are assertive. In contrast to that, Green (2000: 440) formulated the principle of

(23) Embedded Force Exclusion (EFE): If φ is either a part of speech or a sentence, and φ contains some indicator f of illocutionary force, then φ does not embed.

EFE bans force elements from embedded environments.

In Jacobs (2018) the hypothesis that all main clause phenomena (MCP) are licensed through illocutionary force is criticized. Instead, three types of MCP are distinguished (Jacobs 2018: 133):

(24) a. *MCP-I* are possible in some, but not all adverbial or attributive clauses and in some, but not all complement clauses.
b. *MCP-II* are possible in a broader range of embedded clauses, including clauses that don't allow MCP-I.
c. *MCP-III* are not possible in (non-quotational, non-paratactic) embedded clauses.

Jacobs proposes that MCP-I, like for example the German discourse particles *ja*, *doch* and *denn*, and MCP-II, like for example the evaluative/epistemic adverbs *leider* 'unfortunately' and *sicherlich* 'certainly', are subject to different but possibly overlapping pragmatic/semantic conditions to their linguistic context.[4] According to Jacobs, the relevant conditions do not involve illocutionary licensing but reflect their status as expressive elements in the sense of Potts (2005) and Gutzmann (2013). MCP-III are subject to conditions inherent to sentence-mood constructions. Among other phenomena, MCP-III include V1 or V2 word order in interrogative clauses, which is not embeddable as (12) illustrates. In contrast, Jacobs (this volume) argues that V2 in a declarative clause does not fit into any of the classes in (24) but that it is a MCP of its own kind not linked to the notion of assertion.

Gärtner (2002: 39) scrutinizing the force of V2-declaratives states the "Proto-Force Hypothesis (PFH)" in (25):

(25) Proto-Force Hypothesis (PFH)
V2 declaratives have assertional proto-force.

4 Typical MCP-I are acceptable if they conform the conditions called HARMONY, ANTI-ACTIVATION and ANTI-RESTRICTIVITY. MCP-II have to conform only to a proper subset of these conditions and therefore are less restricted.

which is responsible for fronting the finite verb. In root clauses, assertional proto-force turns into the potential of assertional force. In order to account for restrictions in dependent clauses, Gärtner (2002: 40) formulates some rules of construal which contain a concept of *absorption*. This measure ensures that assertional proto-force can get lost in specific environments. In Truckenbrodt (2006) and Tsiknakis (2016, this volume) the idea of absorption is spelled out by the assumption, that the potential of assertional force associated with V2 cannot only unfold in a context representing the interlocutors' own beliefs about the actual world but also in a derived or embedded context which represents the beliefs of some other individual which is interpreted as a topic in discourse. (For more details see below).

Reis (2016) also makes crucial use of Gärtner's (2002) concept of 'assertional proto-force' and formulates the *Clause Linkage Hypothesis for dependent V2-clauses*. The hypothesis claims that dependent V2-clauses in complement function are truly subordinated and are syntactically in embedded/subordinated positions, while in modifying function V2-clauses are root clauses which are paratactically linked to their associated clause (AC). For both parts the reverse direction also holds (Reis 2016: 312):

(26) *Clause Linkage Hypothesis for dependent V2-clauses* :
   i. If in complement function, dependent V2-clauses are truly subordinate & dependent V2-constructions in embedded/subordinate position, *and* vice versa.
   ii. If in modifying function, dependent V2-clauses are root clauses paratactically linked to their ACs, *and* vice versa.

Reis (1997) argues that V2-argument clauses are *relatively unintegrated* and behave on a par with free *dass*-clauses. Since free *dass*-clauses do not occupy slots in the argument structure of higher ordered predicates, the notion *relatively unintegrated* describes their status as argument clauses on the one hand and independent clauses on the other hand quite well.

Another definition of assertion which makes crucial use of the speaker's liability to the truth of his utterance towards an addressee is proposed by Krifka (2014: 68f):

(27) To express assertional mood, we will make use of an assertion operator, ASSERT. It takes an index i, an addressee variable y, a proposition p and a speaker variable x, and yields the value True iff at i, x is liable for the truth of the proposition p to the addressee y.
   a. ASSERT(i)(p)(y)(x) ⟺ at i, the speaker x is liable for the truth of p at the index i towards the addressee y.

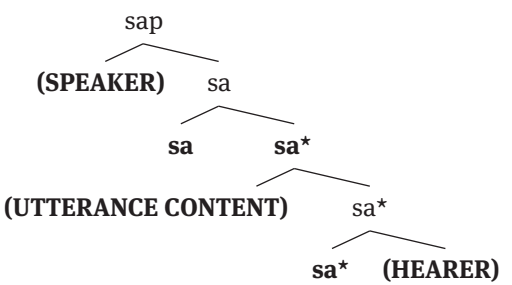
> Notice that ASSERT is a state predicate; it denotes the state of being liable for the truth of a proposition.

This characterization does not have the speaker's judgment about the truth of his thought (Frege 1919/1966) as the focal point, but instead, uses a (social) relation between the speaker and the addressee in a discourse situation. The associated concepts will be debated in the next section.

The interface to the discourse

As opposed to the approaches by Sigurðsson (2011), Truckenbrodt (2006), Sode & Truckenbrodt (2018), who assume silent material in the left clausal periphery connecting elements of the speech situation to the clausal structure, Speas & Tenny (2003) hypothesize that there are grammatically relevant pragmatic roles (P-roles) located in a speech act domain which is a proper part of the syntactic structure of a clause. They assume P-roles for the *Speaker*, the *Hearer* and the *Utterance Content*. To integrate these roles into the syntactic structure they assume a "*Speech Act Phrase* projected from a *Speech Act Mood* head" (Speas & Tenny 2003: 317). Based on the structural configurations derived from Lexical Conceptual Structures (LCS) in the sense of Hale & Kayser (1993) they assume a syntactic configuration for the Speech Act Phrase (sap) of a declarative clause as in (28) (Speas & Tenny 2003: 320):

(28)



The **SPEAKER** is the agent of the speech act, the **UTTERANCE CONTENT** is its theme, and the **HEARER** is its goal. Other speech acts like interrogatives or imperatives are slightly modified configurations of (28). Speas & Tenny acknowledge that the representations may be discourse representations, but then, they claim, discourse representations are constrained by the same principles as LCSs. For a critical review of these assumptions see Gärtner & Steinbach (2006).

In order to interpret the content of propositions containing indexicals Kaplan (1989) in contention with Lewis (1979, 1980) and Stalnaker (1978) proposed a two step interpretation of linguistic expressions. In the first step a *character* function f(c, α) maps a context c onto the intension of α replacing all indexicals in α with their referents in c. If the expression does not contain indexicals, the *character* is a constant function, otherwise it varies from context to context. After the application of the *character*, each indexical has a referential value from the context. An utterance like *I am here now* has as intension at context c_1 (= Paul speaks on March 25 in Paris) the proposition *Paul is in Paris on March 25*, while its intension at context c_2 (= Otto speaks in Moscow on December 24) is the proposition *Otto is in Moscow on December 24*. With the second step the intension of α maps possible states of affairs onto the extension of α in this state of affairs. The first step treats the *context*, the second step the *content*. As Stalnaker put it: "first, facts about the context determine *what is said* in the utterance; second, different facts determine whether what was said is true or false" (Stalnaker 2014: 5). Thus, as far as indexical elements appear in clauses a notion of *context* is required.

Another concept of *context* has been put forward by Stalnaker (1978, 2002, 2014). He assumes a set CG of propositions the interlocutors have accepted as true—the *common ground (CG)*. CG strictly corresponds to the *context set (CS)*. CS contains all worlds in which all propositions from CG are true. Given these notions, the dynamic change from one context to a follow up context through an assertion is modeled through adding the asserted proposition p to CG (29.a) and at the same time intersecting the worlds denoted by p with the worlds in CS (29.b):

(29) a. $CG' = CG \cup \{p\}$ (Commom Ground update)

a. $CS' = CS \cap [\![p]\!]$ (Context Set update)

The relation between CG and the proposition p has to obey some conditions in order to be felicitous. In particular, p should provide new information, i. e. it should be informative with respect to CG as (30.a) expresses. Furthermore, it should be compatible with the CG, i. e. after adding p to CG there should remain at least one world for which all propositions in CG are true. This means that p should not contradict any proposition in CG, as expressed in (30.b) (cf. for instance Büring 1997: 33):

(30) a. $CS \cap [\![p]\!] \neq CS$ (Informativity)

b. $CS \cap [\![p]\!] \neq \varnothing$ (Compatibility)

Wiklund et al. (2009) investigate embedded clauses with and without V2 and test them in environments given by the verb classes proposed by Hooper & Thompson (1973). Instead of relating them to the strict notion *assertion* as Hooper & Thompson (1973) did, they employ the concept of *main point of the utterance (MPU)* proposed by Simons (2007), Simons uses as a diagnostic for MPU the possibility of answering a question. In this sense Wiklund et al. (2009: 1927) assume "that whenever the content of an embedded clause alone can constitute the answer to a question, the embedded clause has the possibility of being the MPU." As a result, Wiklund et al. (2009: 1930) conclude:

(31) Possibility of being MPU ↔ Possibility of displaying unrestricted V2

Julien (2010, 2015) alignes herself to those kinds of assumptions and takes the structure of embedded V2-clauses to contain a Force projection on a par with root clauses. In the usual case—she assumes—V2-clauses are asserted. Especially in the case of disjunctive coordination of V2-clauses she assumes that the disjunctive coordinator has the ability to agree with a Force feature of the first conjunct, since "in coordinations, only the first conjunct can communicate out of the coordinated phrase, and only the first conjunct can agree with the coordinating head and thereby give its features to the CoP as a whole" (Julien 2015: 175). On that take the properties of the disjunction construction are traced back to the syntactic structure of the coordination and the mechanism of the agree relation (see Gärtner & Michaelis (in press) for a critique on these assumptions).

Weakening the strictness of assertion is a goal of Antomo's (2015, 2016) approach which deals with dependent clauses in German. According to this approach V2 is not allowed under the scope of an entailment-canceling operator or if the proposition cannot be the target of a direct rejection. Her approach to dependent V2-clauses is built on assumptions proposed by Simons et al. (2010). These authors intend to clarify the question which conditions allow meaning components to project out of embedded contexts. This issue is at first glance independent of the syntactic configuration of the verb second word order. However, the link is clearly recognizable as soon as the notion *at-issueness* is defined. In order to do so, they refer to the concept of *question under discussion (QUD)*, which was first proposed by Klein & von Stutterheim (1992), Roberts (1996), and formulate a condition of its relevance:

(32) Relevance to the QUD (Simons et al. 2010: 316):
   a. An assertion is relevant to a QUD iff it contextually entails a partial or complete answer to the QUD.

b. A question is relevant to a QUD iff it has an answer which contextually entails a
partial or complete answer to the QUD.

At-issueness, then, can be definied as follows:

(33) At-issueness (Simons et al. 2010: 323):
a. A proposition p is at-issue iff the speaker intends to address the QUD via ?p.

b. An intention to address the QUD via ?p is felicitous only if:
i. ?p is relevant to the QUD, and
ii. the speaker can reasonably expect the addressee to recognize this intention.

As Simons et al. (2010: 315f.) claim, only not-at-issue content can project out of embbeded contexts. To connect these findings with verb second constructions, Antomo (2016: 26) building on the notions in (32) and (33) formulates the *At-issueness-Hypothesis (AIH)*:

(34) Only dependent clauses that target the current QUD, i. e. express at-issue content (whereas the matrix clause is not-at-issue), license V2 order. V2 is an optional marker for at-issueness.
Short: V2 → [+at-issue].

Antomo suggests that the often proposed correlation between verb second clauses and assertion fits well with the notion of at-issueness.

The treatment of fronting the finite verb in the theory of Lohnstein (2019, 2020) in (21) models the at-issueness-hypothesis on the basis of the grammatical properties (*tense*, *mood*, *agr* and *finiteness fronting*) alone. The discourse table is the place where speaker and hearer negotiate their respective knowledge and their commitments with respect to the illocutionary interpretation of the utterance. The connection of the morpho-syntactic features of finiteness with the verb second property yielding the anchoring of the respective propositional objects on the discourse table. Together with Antomo's (2016) at-issueness hypothesis (AIH) and Simons et al. (2010), this leads to the relevance of the clausal content for the QUD. Although developed for the independent reason of sentence mood constitution, it gives a morpho-syntactic and semantic implementation of the grammatical basis of the grammatical properties of the pertinent constructions as well as their interpretation with respect to at-issueness.

Gärtner & Michaelis (2010, in press) argue on the basis of disjunctive coordination of V2- declaratives that the notion *assertion* does not apply in this case, since the speaker is not committed to assume the truth of any of the disjuncts. In order to propose a weaker condition than *assertion* they propose the notion *progressive update* of the common ground in a theory of dynamic information change. It requires the new common ground CG′—which is identified as the set of possible worlds in the context set (see above)—to be a subset of the intersection of the old common ground CG with the union of the disjuncts. For instance, the example in (35) is an obstacle for the assumption that a speaker is committed to the truth of a verb second clause (cf. Gärtner & Michaelis in press: Example (8)):

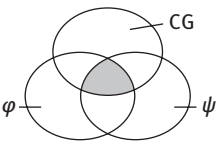
(35) [*In den Alpen schneit es*]$_{\phi}$ oder [*am Bodensee herrscht ein Gewitter*]$_{\psi}$
"It is snowing in the Alps or there is a thunderstorm at Lake Constance."

The *progressive update* of the Common Ground is then defined in the following way:

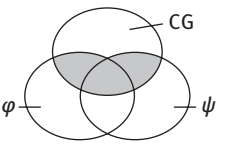
(36) Progressive Update
An assertive update CG′ of a common ground CG by an utterance u_d containing meaning components $\blacktriangleright\phi 1, \ldots, \blacktriangleright\phi_n$ is progressive, if CG′ ⊆ [CG ∩ ($\phi_1 \cup \ldots \cup \phi_n$)]
(where $\blacktriangleright\phi$ abbreviates that ϕ is *asserted*).

Similar to the general update function with simple propositions in (30.a) the context set of the new CG′ needs to be contained in the context set of the old CG and all worlds not compatible with the new (complex) proposition have to be evacuated. *Progressive update* therefore is an extended version of an informativity requirement on the relation between a proposition p and the CG, which is due to V2-declaratives. The following diagrams exemplify the updates for (i) conjunction and (ii) disjunction as Gärtner & Michaelis (in press) propose:

a. Conjunction:



b. Disjunction:



They further argue that other kinds of propositional connections lead to CG configurations in the 'wrong' way, so that V2-declaratives are not allowed in these constructions, for instance conditional clauses or negation in matrix clauses.

Disjunctive coordination of V2-clauses—Gärtner & Michaelis (in press) argue—provide a useful tool to test assumptions of other approaches. In particular, they discuss the assertion hypothesis put forward by Julien (2015) and the at-issueness-hypothesis proposed by Antomo (2015, 2016).

A model of dynamic context change, which makes the negotiation about the truth of a proposition a bit more explicit, is proposed by Farkas & Bruce (2010). They distinguish the speaker A, a table that is the place on which the propositional objects are placed after their utterance, and a hearer B. The table can be considered the location where the discourse participants negotiate the knowledge they are (un-)willing to accept. Furthermore, there are two sets DC of discourse commitments—one for the speaker, one for the hearer.

(37) (Simple) Model of a context structure (Farkas & Bruce 2010: 89):

A	**TABLE**	**B**
DC_A	S	DC_B
Common Ground cg	**Projected Set** ps	

The idealized steady state of a discourse is represented by the situation where the table is empty—all questions (especially QUD) are answered and there are no further propositions which need to be discussed or clarified.

Tsiknakis (2016, 2017, this volume) employs a different model of dynamic context change which is built on the notion of a context c with the components in (38):

(38) $c = \langle \ldots , CG_c, QUD_c, D_c, \ldots \rangle$

The component CG_c represents the conversational background of the root context c—i. e. the context set representing the information of the common ground in the sense of Stalnaker (1978). The component QUD_c represents the question under discussion of the context (Roberts 1996). The component D_c stands for a set of embedded contexts, among them a set of contexts each containing its own conversational background representing the information that the interlocutors have about the doxastic commitments of some individual which is topic in the discourse (Farkas 2003). As mentioned above, Tsiknakis hypothesizes that V2-movement of the (indicative) finite verb and topicalization of a non-relative [–wh]-phrase is triggered by two left peripheral features [F1] and [F2] whose interpretation defines the context change potential (CCP) of the clause. For the formulation of the CCP of V1-yn-interrogatives, V2-wh-interrogatives and V2-declaratives Tsiknakis relies on the concept of *decidedness* in (39) (cf. Farkas 2003: 6) and the related concept of *openness* in (40):

(39) Decidedness
Let p be the proposition expressed by the descriptive content of a clause and X a set of possible worlds of a conversational background.
a. p is *positively decided* relative to X iff $X \subseteq p$.
b. p is *negatively decided* relative to X iff $X \cap p = \emptyset$.
c. p is *undecided* relative to X iff neither (39.a) nor (39.b) holds.
d. p is *decided* relative to X iff either (39.a) or (39.b) holds.

(40) Openness
Let Q be a set of propositions expressed by the descriptive content of a clause and X the set of possible worlds of a conversational background.
a. Q is *open* relative to X iff at least one proposition in Q is undecided relative to X.
b. Q is *(completely) closed* relative X iff every proposition in Q is decided relative to X.

He proposes that the feature [F1] defines a CCP which requires that the descriptive content of the clause is *undecided*—in case the descriptive content is a proposition—or *open*—in case the descriptive content is a set of propositions—relative to a variable doxastic conversational background X of an input context c and becomes *decided* or *(completely) closed* relative to X in a context c″ which follows the output context c′ which is projected through the anchoring of the clause in the input context c. In the standard case, the result is that the content of root V1 yn-interrogatives and V2-wh-interrogatives is added to the question under discussion of the context such that the common ground can be updated by the addressee through the answer to the question expressed by the interrogative. The feature [F2] is considered a modifier of the conditions imposed by [F1] such that combination of the two features in V2-declaratives requires that the content of the clause is *undecided* in c relative to X and becomes *positively decided* in c′. This ensures that, in the standard case, V2-declarative root clauses lead directly to an update of the information in the common ground. The relation of modification which is proposed to hold between [F1] and [F2] excludes the possibility of topicalization without V2-movement of the finite verb. This captures the ungrammaticality of clauses like (11.b). In case of V2-declarative complement clauses, Tsiknakis proposes that the CCP associated with the features [F1] and [F2] targets the conversational background of an embedded context in the component D_c, an idea which is already present in Truckenbrodt (2006). Matrix clauses which possibly imply an update of an embedded doxastic conversational background compatible with the requirements of [F1] and [F2] are said to allow embedded

V2-declaratives, while matrix clauses incompatible with the requirements are impossible with embedded V2-declaratives.

Staratschek (2017) searches for a common denominator concerning the function of dependent V2 scrutinizing specific causal clauses (WV2), sentences that following Ebert, Endriss & Gärtner (2007) mimic relative clauses and have been interpreted as V2-relative clauses (RV2) as well as V2 under epistemic verbs (KV2). A comparative analysis of these three sentence types focusses on the nature of involved contexts, that may be targets for updates triggered by these constructions and the correlation of syntactic and pragmatic integration. While WV2 and RV2 with a higher degree of syntactic independence seem to be limited to update the common ground (CG), the more integrated KV2 are inherently used in constructions with derived contexts (Stalnaker 1988) as the aforementioned embedded doxastic conversational backgrounds (Tsiknakis 2016, 2017, this volume).

Licencing conditions for KV2 seem to involve the shared knowledge incorporated by the common ground as well as the knowledge of speaker and addressee about the matrix subject's and the speaker's doxastic system. V2-clauses in these contexts are interpreted as updates of the derived contexts with implicatures for the speaker's commitment, while WV2 and RV2 on the other hand in general initiate updates of the discourse context.

The resulting assumption is that V2 plays a crucial role in triggering context updates of different kinds like the derived context of speaker commitment (DC_x following Farkas & Bruce 2010) and is able to bring propositions onto the table without necessarily committing the speaker rather than being plain speaker assertions in all instances.

To define assertions more strictly and discern them from mere speaker commitments, the assumed difference is scrutinized in Staratschek (2018) with concern to disintegrated sentences. Here V2 is interpreted as a mean to force an evaluation of a proposition with concern to the common ground, while the lack of movement of finite verbs results in a lack of attribution to a specific context. While the ambiguity of these constructions is only emphasized when other contexts than the common ground are available, she claims that V2 anchors the proposition in the discourse, while it is linked to any available salient context (as a default DC_x, as the set of propositions the speaker is publicly committed to) without the fronting of finiteness.

All the approaches represented in this introductory section focus on aspects of the verb second phenomenon and outline a rich field of research questions and attempts to answer them. The contributions in this survey aim at clarifying and solving the pertinent problems further and at trying to deepen our understanding of this part of the language faculty.

The contributions

The article *A grammar competition analysis of V2 phenomena in second language acquisition* by **Leah Bauke** investigates the influences of grammar internal optionality and cross-linguistic variation of L2 English speakers whose L1 is the V2-language German. In particular, the article deals with the realization of the particle in particle constructions that involve two objects in English. Two self-conducted studies are presented: The first study tests the realization of the particle in double object plus particle constructions in which the direct object is realized as full NP and the indirect object as full NP or pronominal NP. The second study tests double object plus particle constructions in which the direct object is realized as full NP and the indirect object as PP or pronominal NP. Both studies reveal that the placement of the particle in double object plus particle constructions is a challenge for the L2 speakers. The collected data show that there is no grammar internal competition since the constructions with a PP in indirect object position receive similar low ratings as the variants with a (pro)nominal NP. Additionally, the data show that the L2 speakers are not directly influenced by the surface structure of German in which the particle has to be realized in final position. Nevertheless, Bauke proposes as an explanation that the L2 speakers analyze particle constructions with their German L1 grammar. According to Bauke, the L2 speakers place the particle inside the VP with the result that the realization of a second object becomes impossible. Therefore, the entire construction is considered ungrammatical by the speakers.

Josef Bayer and **Constantin Freitag** defend in their contribution *How much verb moves to second position?* the claim that the appearance of the finite verb in second position in a V2- language is a result of generalized pied piping. In detail, they propose that the movement of the finite verb to the second position is triggered by the finiteness features of verb and that the lexical part of the verb is reconstructed and semantically evaluated in its base position, which in German is the clause-final position. The article is organized into two major parts: The first part presents theoretical arguments in favor of their thesis which are drawn from the scrutinization of particle verbs, negative polarity and other linguistic phenomena. The second part of the article provides experimental evidence of their claim. It discusses previous studies on German sentence processing that reveal that processes depending on the lexical semantics of the verb, like the processing of argument structure, are not facilitated when the finite verb is realized in second position, but follow the same processing routines as in V-final clauses. Furthermore, the authors present a self-paced experiment which investigates the on-line reading of sentences with the German NPI-verb *brauchen*. The experiment provides evidence that the parsing of such sentences requires that the verb *brauchen*

is lowered from its surface position to the next possible structural landing site. If this is a position c-commanded by negation the parse of the sentence converges, otherwise it collapses, which manifests in enhanced reading times in the experiment.

The subject of the article *Notes on the left periphery of V2 complement clauses in German: Complementiser drop and complementiser doubling* by **Ulrike Freywald** is the syntactic structure of the left periphery of V2-complement clauses in German. Insights are gained through the discussion of *dass*-clauses with a second, resumptive complementizer, as for example illustrated in (41):

(41) Und ich weiß, **dass** wenn ich eine E-Mail bekomme oder
And I know that when I a email get or
eine SMS, dass niemand mich zwingt, diese sofort
a text.message that nobody me forces this at.once
abzurufen.
to.check
'And I know that when I get an email or a text message nobody forces me to check it immediately.'

The first part of the article reports the restrictions of the left periphery of V2-complement clauses. In contrast to V2-main clauses, V2-complement clauses do not allow VP fronting, adverbial fronting and left dislocation. According to Freywald, this indicates that V2-complement clauses are just FinPs. That means they do not have a fully articulated syntactic structure in the left periphery in the sense of Rizzi (1997) as opposed to V2-main clauses. The second part of the article provides arguments that complementizer doubling as illustrated in (41) is not just an performance phenomenon. Complementizer doubling does not only occur in spoken language but also in written texts. Moreover, the material sandwiched between the complementizers has to be topical and can be relatively short. In order to reconcile these findings with the observation that the left periphery of V2-complement clauses is less flexible than the periphery of V2-main clauses, Freywald proposes that the extra complementizer position and the extra position of the sandwiched phrase are created through recursion of FinP together with the left periphery of a topic layer which is located in the midfield of the German clause structure as illustrated in (42). In the proposed analysis, the categorical status of the V2-complement clause remains unchanged, which allows Freywald to maintain the thesis that V2-complement clauses display a reduced syntactic structure in left periphery.

(42) [$_{\text{FinP}}$+ [$_{\text{Fin}}$+ *dass* [$_{\text{FrameP/ShiftTopP}}$+ Topic-XP [$_{\text{FinP}}$ [$_{\text{Fin}}$ *dass* [$_{\text{FrameP}}$ [$_{\text{ShiftTopP}}$ [$_{\text{ContTopP}}$ [$_{\text{TP}}$ …

Roland Hinterhölzl criticizes in his article *Assertive potential, speaker evidence and embedded V2* the assumption that embedded V2-relative clauses, V2-adverbial and V2-*dass*-clauses are coordinated speech acts. Instead, he argues that these clauses are regular subordinated clauses which lack independent assertive force. He proposes that in these clauses V2 indicates that the embedded proposition has to be epistemically anchored to the speaker which is considered to be a precondition of assertive illocutionary force. This assertive potential has to be licensed via a local agree-relation which holds between the embedded clause and an assertive operator in the main clause. The establishment of the agree-relation is made responsible for the distributional properties of embedded V2-clauses, viz. they have to be obligatorily extraposed and cannot occur in the scope of negation and interrogative operators. Furthermore, Hinterhölzl presents in his contribution an analysis for V2-relative clauses which captures the restriction to weak determiners in the related nominal constituent in the main clause and their characteristic interpretative properties. The presented analysis is based on the idea that weak determiners, as opposed to strong determiners, are generated as part of the NP-head in the embedded clause. In detail, Hinterhölzl proposes that in a first step a full NP together with the weak determiner is generated in the base position of the relative clause which is raised to SpecCP to enter a matching-configuration with the related NP in the matrix clause in a second step. The raised NP is deleted then at the phonological representation of the clause and finally spelled out as the relative pronoun. The crucial point of his analysis is that at the logical representation of the clause the weak determiner is not interpreted in the matrix clause but in the embedded clause instead.

In the article *What kind of main clause phenomenon is V2 in German?* by **Joachim Jacobs** V2 in German declarative clauses is compared to other main clause phenomenona. The background of the discussion is Jacobs (2018) in which three types of main clause phenomena are distinguished: main clause phenomena which are possible in some, but not in all subordinated clauses (MCP-I), main clause phenomena which are possible in a broader range of integrated sub- ordinated clauses (MCP-II) and main clause phenomena which are excluded from all integrated subordinated clauses (MCP-III). Jacobs shows that V2 in German declarative clauses does not match any of the presented types of main clause phenomena. In detail, Jacobs argues that V2 is not a veridical element and therefore cannot be a marker of assertive sentence mood. Jacobs criticizes three alternatives to the assumption that V2 in declarative clauses is grammatically associated with assertion: firstly, the assumption that V2-declarative clauses have assertional proto-force which becomes ordinary assertional force in root contexts or has to be absorbed by the semantic environment. Secondly, the assumption that V2 in declarative clause indicates that the clause content is the main point of

the utterance and thirdly, the assumption that V2 in declaratives expresses truth judgement. Jacobs rejects all of the three alternatives. He argues that V2 has no stable interpretative effect and that the illocutionary force of V2-declaratives is determined merely pragmatically. Instead, he proposes that V2 is a pure syntactic phenomenon which is possible in subordinate position if the selectional properties of syntactic environment license the use in this position.

The article *The left periphery as interface – On verb second and finiteness interaction* by **Horst Lohnstein** and **Nathalie Staratschek** propose a compositional analysis of the interpretation of finiteness and V2 word order in German. The authors start with an analysis of the verbal inflection system of German. The proposed analysis makes crucial use of two features [±t] and [±e] which are realized by the presence or absence of the morphemes *-t* and *-e* in the inflectional forms of finite verbs. The specification of these features is said to determine whether an additional speech context, evaluation time or evaluation world becomes relevant for the interpretation of the propositional object expressed by the clause. Having clarified the theoretical background, the authors continue with the presentation of their analysis of verb second word order. The core idea of the presented analysis is that fronting the finite verb to the left peripheral C position serves the purpose to anchor the propositional content of the clause to the discourse context. By this process, the deictic subcomponents of finiteness—tense, verbal mood and agreement—get access to the time of speech, the world and the addressee of the context. V2 word order results from additional fronting of another constituent to SpecC. In case of fronting a [–wh]-phrase, the authors claim—in accord with Frege's analysis of the judgment—that this signals the cognitive act of judging the expressed proposition to be true. In the following, a formal pragmatic theory is presented to model the proclamation of the truth of the judged proposition which is based on the discourse model of Farkas & Bruce (2010). According to Lohnstein and Staratschek, the utterance of a V2-clause causes the semantic object representing the clause content to be placed on the so-called *discourse table*, the component of discourse context which contains the propositional objects whose truth value the discourse participants negotiate. Finally, the presented theory is applied to analyze dependent V2-clauses.

The article *Variation and change in the licensing of dependent V2 in German* by **Svetlana Petrova** investigates on the basis of corpus data the predicate classes that license asyndetic V2-complements (aV2) in Old and Middle High German. The investigation reveals that there are striking parallels in the typology of aV2-embedding predicates in modern German and its historical ancestors: the predicates that allow for aV2 in modern German—predicates of saying and doxastic predicates—do so in Old and Middle High German and predicates that block aV2 in modern German—factive emotive, semi-factive, implicative predicates— disallow

aV2 in historical German, too. An exception to this picture constitute predicates with an inherent negative feature and negative implicative predicates, which allow V2-complements when the matrix predicate is negated. Petrova argues that this construction is a remnant of a previous syndetic construction where the complement clause is introduced by the negative complementizer *ni* which turns to a verb cliticon in the period of late Old High German. With the loss of the cliticon, aV2 in the context of inherent negative and negative implicative predicates gets lost, too. Petrova's contribution shows that the predicate classes licensing/blocking aV2 is rather constant throughout the different stages of the German language system and that the few existing differences are there due to the different lexical inventory of the different stages under consideration.

Cecilia Poletto's article *On the licensing of null subjects in Old Venetian* is concerned with the correlation of V2 and the distribution of null subjects in Old Venetian. Poletto shows that the traditional view that null subjects are licensed by movement of the finite verb to C may explain the asymmetry between main and embedded declarative clauses regarding the possibility of having null subjects in Old Venetian, but fails to explain why main interrogatives, although having V-to-C movement, cannot license null subjects too. Instead, an alternative account is presented which is built on the idea that null subjects are licensed through the binding of different kinds of null topics in the left periphery of the clause structure. Poletto proposes that null subjects in Old Venetian are licensed through null aboutness topics. Since aboutness topics are regarded as main clause phenomenon, the asymmetry between main declaratives and embedded declaratives in Old Venetian follows from this. The asymmetry between main declaratives and main interrogatives is then explained by the assumption that the relation between the aboutness topic and null subject in the case of interrogatives is blocked by a wh-item as a relativized minimality effect in the sense of Rizzi (1990a, 2013).

The article *V3 as cluster movement in German* by **Joachim Sabel** deals with the so-called V3-sentences in German. Those are sentences in which more than one constituent is located before the finite verb in the left sentence periphery, as for example shown in (43):

(43) [$_{CP}$ Dauerhaft genügend Studienplätze [$_{C}$ garantiert] der neue Bildungsminister]
lastingly enough university places.ACC guarantees the new minister of education.NOM

In the first part of the article Sabel criticizes two existing approaches to analyze this phenomenon: Firstly, the VP-topicalization approach in which

V3-sentences are derived by movement of an empty headed VP to the position in front of the finite verb and, secondly, the multiple specifier approach in which every constituent in front of the finite verb in a V3-sentence is located in its own specifier position. Both approaches are shown to be incapable of capturing the restrictions which the constituents in front of the finite verb are subject to. Sabel then presents an analysis which avoids the shortcomings of the previous discussed approaches in the second part of the article. He proposes that the constituents in front of the finite verb in a V3-sentence are a moved cluster which is formed by right adjunction and regarded as an instance of scrambling. The benefit of the cluster analysis is that it not only captures the observed restrictions, but that the thesis that German is a strict V2-language can be maintained.

The article *On the role of the left periphery in the interpretation of causal Wo-VE-clauses* by **Sonja Taigel** presents a compositional analysis of a peripheral type of assertion in German that is realized through a verb final clause introduced through the complementizer *wo* (*wo-VE-declarative clause*). Taigel focusses on uses of this clause type which display a causal relation at the epistemic/illocutionary level of interpretation, i. e. the clauses are used to motivate or justify assumptions, speech acts or attitudes. Additionally, the investigated cases may show a concessive reading at the propositional level of interpretation and in typical cases contain the modal particle *doch*. In passing, Taigel makes a comparison with functional related clause types in which the finite verb is fronted to the left periphery, mainly the verb first declarative clause (*V1-declarative clause*). She advances the thesis that *wo*-VE declarative clauses are highly underspecified due to the various possible interpretations of the complementizer (temporal, adversative, local or causal) and makes the context and the contribution by the particle *doch* responsible for the interpretative characteristics of the clause type. Taigel argues that the additional concessive reading depends on whether the assumption, speech act or attitude motivated by the clause can be considered to be astonishing and that the particle *doch* indicates that the utterance of the clause reacts to an open issue in the discourse. Through that the particle indirectly contributes to the causal interpretation of the clause.

The article *Parentheticals, root phenomena, and V2 in German* by **Hubert Truckenbrodt** and **Frank Sode** presents an analysis which captures the differences between so-called *bare parentheticals* which in German are realized as verb first clauses (*V1-parentheticals*), and *as*-parentheticals, which in German are realized as verb final clauses introduced by the lexical item *wie* (*wie-parentheticals*). The presented analysis is embedded in an extended version of the theory developed in Sode & Truckenbrodt (2018) whose core idea is that root clauses are characterized through a silent Force-head which anchors the

content of the clause to a doxastic or volitional attitude of an individual. The first part of the article reports restrictions of bare parentheticals that are not shared by *as*-parentheticals. The main distinction relevant for the proposed analysis is that the host clause of bare parentheticals, in opposition to the host clause of *as*-parentheticals, has to be a root clause. It follows an explication of the aspects and extensions of the account in Sode & Truckenbrodt (2018) that are relevant in the proposed analysis of parentheticals which is finally presented in the frame of the previous outlined theory. They main point of the analysis is that V1- and V2-clauses are equipped with a Force head which is valued by grammatical interactions which involve V-to-C movement. In bare parentheticals, this special force head additionally enforces the movement of an attitudinal operator to its specifier position which has to be licensed by the ForceP of a hosting root clause. In contrast to that, the force head of *as*-parentheticals does not get his attitudinal values by grammatical interactions but from antecedents that are not necessarily local. It also does not trigger the movement of an attitudinal operator to its specifier position. Therefore, *as*-parentheticals neither involve V-to-C movement nor needs their host clause be a root clause.

The article *Verb movement and topicalization in German* by **Antonios Tsiknakis** deals with the function of indicative finite verb movement to C and topicalization of a non-relative [–wh]- phrase to SpecC in German. The presented account is embedded in a critical discussion of the maximalist approach to sentence mood proposed in Altmann (1987, 1993) and the minimilist approach in Portner (2005). Tsiknakis suggests that V-to-C movement is triggered by an interpretable feature [F1] in C-position and topicalization by a feature [F2] which modulates the interpretation of [F1]. Relying on the concept of *decidedness* from Farkas (2003) and the related concept of *openness*, Tsiknakis argues that the presence of [F1] signals that the clause content is undecided/open relative to a doxastic conversational background of the context in which the clause is supposed to be anchored through the clause uttering and that it has to become decided/closed relative to that background in a context which follows the output context that is generated through the anchoring of the clause in the original input context. Furthermore, Tsiknakis proposes that [F2] modifies the interpretation of [F1] such a way that the combination of [F1] and [F2] requires the undecided clause content to become positively decided directly in the output context which is projected through the anchoring of the clause. The proposed analysis maintains a balanced position between the discussed maximalist and minimalist approach to sentence mood and shows that the use potential of the relevant clause types can be derived in a compositional manner.

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Leah S Bauke

A grammar competition analysis of V2 phenomena in second language acquisition

Abstract: This paper investigates grammar competition/multiple grammar effects in double object plus particle constructions of L1 German/L2 English speakers. The paper examines the role of the categorial status of objects in double object constructions (i.e. nominal vs. pronominal vs. prepositional objects) as well as the role of word order effects within and across the two languages and shows that L1German/L2 English speakers do not show grammar competition/multiple grammar effects at the level of superficial constitiuent ordering whereas at the level of abstract sentence structure a clear effect emerges. This explains why L1 German/L2 English speakers can hardly accomodate double object plus particle constructions in their L2 English (even when at a very high overall proficiency level in L2 English and) despite the fact that the same construction with different surface word oder exists in their L1.

1 Introduction

This paper investigates in how far language internal optionality and cross-linguistic variation have an effect on highly proficient L2 English speakers whose native language is German. In particular, the present study examines the L2 English performance of L1 German speakers in a grammaticality judgement task on double object plus particle constructions. The analysis is presented in the context of grammar competition (GC)/multiple grammar (MG) theory and it is shown that language internal and cross-linguistic competition between grammars has an impact on the L2 performance of highly proficient L1 German/L2 English speakers. Both, German and English allow for optionality in the realization of di-transitive constructions, which can either be realized in two nominal phrases or in one nominal phrase and a prepositional phrase. Additionally, English verb-particle constructions allow for optionality in particle placement, which can either be stranded in sentence final position or pied-piped into sentence medial position, immediately following the verb. In German stranding the particle in sentence final position is the only option, however, ditransitive

Leah S Bauke, University of Wuppertal

https://doi.org/10.1515/9781501508141-002

constructions with particle verbs in English are also restricted. Here the particle cannot be stranded in sentence final position; it must be pied-piped to sentence medial position either immediately following the verb or in between the two nominal objects. This study investigates both, the language internal variation in German and English ditransitive constructions as well as the cross-linguistic variation between German and English and the different possibilities of particle placement in the two languages and addresses the question which of the two factors has a stronger impact on L2 English performance of L1 German speakers and it is shown that even highly proficient L2 English speakers perform at chance level in a grammaticality judgement task on ditransitive verb-particle constructions. The study presented in this paper is part of a larger investigation on word order variation phenomena in L2 acquisition. As indicated above, the main purpose of the current study is to present a descriptive overview on the role of V2 in double object constructions in German and in English. It is not the aim of the paper to argue in favor of or against one of the many theoretical accounts on double object constructions for any of the two languages that are available in the linguistic literature. Hence, the discussion of the data will remain on a relatively atheoretical level with a main focus on descriptive adequacy for L2 acquisition and only very few comments on a syntactic analysis for double object constructions.

In chapter 1 we provide a short introduction into the main assumptions of GC/MG theory in first as well as in second language acquisition research. Chapter 2 looks into language internal and cross-linguistic variation in ditransitive verb-particle constructions in German and in English in more detail. In chapter 3 two current studies are presented, analyzed and discussed and chapter 4 concludes the paper.

2 Grammar competition/multiple grammar theory

2.1 First language acquisition and diachronic linguistics

The term *grammar competition* was first introduced in the context of historical linguistics (cf. Kroch 1989, Kroch and Taylor 1997, Pintzuk 1999, *et seq.*) in the context of word order variation in Old English. Old English is standardly analyzed as an SOV language (cf. e.g. Fischer et al. 2000), however, already in Old English some constructions have an SVO order. This, according to Pintzuk (1999, and others) can be analyzed in terms of two competing subgrammars that existed side by side in the grammar of Old English, with one grammar generating the then standard SOV order and the other grammar generating the SVO order in certain contexts.

A similar concept can be found in the context of first language acquisition in Roeper (1999) under the name *multiple grammar theory*. Here Roeper (1999) observes that at one stage in language acquisition children produce the constructions in (1) in free variation:

(1) a. Him want.
b. He wants.

This, Roeper argues, can be accounted for under the assumption that at this stage in the acquisition process children entertain two subgrammars. One is a minimal default grammar directly driven by UG, which generates the form in (1a) without agreement and without nominative Case marking on the pronoun and one is a more explicit grammar that generates the forms in (1b) in which agreement and structural Case marking are realized overtly. So, again, the child maintains both grammars for a certain period of time in the acquisition process and eventually discards (or deactivates) the minimally default grammar in favor of the more explicit grammar. At this stage the optionality disappears and the form in (1b) is realized exclusively.

Basically the same argument can be made for the change from a grammar that allowed for SVO and SOV in Old English to a grammar that generates SVO structures only in Early Middle English. Thus, in both cases the grammar that included two alternatives is an unstable system that is eventually stabilized into a strict SVO grammar or a grammar that marks agreement and structural Case, respectively. The only difference between GC and MG then is that in language acquisition it can be argued that the minimal default grammar is not completely deleted. So, one of the sub-rules is the productive and default rule, while the other instead of being deleted is simply marked for specific contexts, which require some sort of lexical, pragmatic (or some other form of) marking. In the context of the examples mentioned in (1) this would, for instance, be all realizations of default/objective/accusative Case marking instead of nominative Case marking in constructions like (2), which can, for instance be found in abundance in colloquial language or in internet posts (cf. Roeper 1999; 2016 for details and examples):

(2) Me don't like that.

This then means that the subgrammar generating such constructions is not deleted completely but simply restricted to very specific licensing conditions, which further entails that maintaining two subgrammars generating two different constructions is no longer an unstable state. Thus, in the context of this study we will use the two terms interchangeably and only prefer one over the other in those contexts where a distinction between a stable and an unstable system is relevant.

2.2 Second language acquisition

Provided that language internal competition of the kind described above exists in diachronic contexts and in contexts of first language acquisition, it is only natural to ask whether it can also be found in second language acquisition contexts. Here two potential sources for competition need to be distinguished. One is competition within the grammar of the second language. The other is cross-linguistic competition between the grammar of the first language and the grammar of the second language. While we will take into account both types of competition in this study, research in second language acquisition so far has focussed exclusively on cross-linguistic competition between L1 and L2 in various contexts (cf. e.g. Amaral & Roeper 2014; Bauke 2019, Rankin 2014; Yang 2003 and many others). Amaral and Roeper (2014), for instance, argue for grammar competition in the acquisition of the overt pronoun constraint in L2 Spanish of L1 English speakers. Bauke (2019) shows that in L2 English grammar competition plays a role in the interpretation of subject and object wh-constructions of highly proficient L1 German speakers, who tend to interpret subject wh-constructions with a particle more often as either being ambiguous between a subject and an object question or straightforwardly as an object question than a native speaker control group and a control group of L1 speakers whose native language is not a V2 language. In both studies it has been shown that those phenomena that have previously been analyzed as L2 processing errors can now be accounted for more straightforwardly and at a deeper level of analysis rooted in GC/MG. GC/MG follows the assumption that some version of the Full Access/Full Transfer Hypothesis (Schwartz & Sprouse 1998) or the Full Restriction Hypothesis (White 2003) holds, i.e. the assumption that UG is available in L2 acquisition as well, and that all the properties of the L1 grammar are available to the L2 learner (cf. e.g. Slabakova 2016 for a comprehensive overview of the various instantiations of Full Access/Full Transfer and their relation to UG). Additionally, just like in the L1 contexts described in the previous section, it is assumed that grammar can only ever be augmented by additional subrules and these subrules may or may not stand in competition with already existing rules in L1 or L2. Thus, in contrast to other approaches to second language acquisition, there is no restructuring or parameter resetting in GC/MG. Hence, in L2 acquisition additional subrules may then compete either with the rules from the L1 grammar, or rules may stand in competition language internally and here the competition may arise either inside the L1 grammar, the L2 grammar or both. With this much in place, it is now time to turn to the empirical data and determine the range of language internal and cross-linguistic variation that is involved in double object and verb particle constructions in German and in English.

3 A GC/MG account on language internal and cross-linguistic variation

We will start with a closer look at transitive verb-particle constructions in German and in English and turn to double objects and their relation to particle verbs in both languages in a second step. Both, German and English allow for verb particle constructions with transitive verbs.[1] These are illustrated in (3) for German and in (4) for English.

(3) a. Anna holte Khatia ab.
Anna picked Khatia up
'Anna picked Khatia up'.

b. *Anna abholte/holte ab Khatia.
Anna picked up Khatia

(4) a. Anna picked Khatia up.
b. Anna picked up Khatia.

However, English is more flexible with respect to particle placement than German. While in the English examples in (4a) the particle can either be stranded in sentence final position or pied- piped along with the verb in (4b), the latter is not an option in the German sentence in (3b), where particle stranding in (3a) is the only option available. Thus, we can see here that there is no optionality in the German grammar when it comes to particle placement, but there is optionality in the English grammar in this context.

Let us now turn to ditransitive constructions in German and in English. The relevant data are provided below in (5) for German and in (6) for English:

(5) a. Ted schrieb seiner Mutter einen Brief.
Ted wrote his mother a letter
'Ted wrote his mother a letter'.

b. Ted schrieb einen Brief an/für seine Mutter.
Ted wrote a letter to/for his mother
'Ted wrote a letter to/for his mother'.

1 We will not got into the specifics of the analysis of verb-particle constructions and/or ditransitive constructions here and simply refer the reader to the impressive body of literature that already exists on these topics (cf. e.g. Larson 1988; or more recently Haspelmath 2015; and many many others) and assume our approach is compatible with most of the accounts presented there.

(6) a. Ted wrote his mother a letter.
b. Ted wrote a letter to/for his mother.

As we can see here, ditransitive constructions with two objects can be realized both in German and in English either with two nominal constituents (5a/6a) or with a nominal phrase followed by a prepositional phrase (5b/6b). Thus, here we can observe language internal variation in the grammars of both languages and this variation seems to be governed by the same sub-rules. Thus, in both languages, it is the indirect object that can be realized either in a nominal or in a prepositional phrase.

Finally, we can now look into the variation in ditransitive constructions with particle verbs in the two languages. The data are provided in (7) and (8):

(7) a. Jack händigte den Kindern die Preise aus.
Jack handed the children the prizes out
'Jack handed the children out the prizes'.
b. Jack händigte die Preise an die Kinder aus.
c. *Jack aushändigte/händigte den Kindern aus die Preise.
d. *Jack aushändigte/händigte die Preise aus an die Kinder.

(8) a. Jack handed the children out the prizes.
b. Jack handed the prizes out to the children.
c. *Jack handed the children the prizes out.
d. *Jack handed the prizes to the children out.

As we can see here, both languages again allow for variation in the realization of the indirect object, which can be derived either in a nominal phrase or in a prepositional phrase. What we can also see is that both languages do not allow variation for the particle. While this matches with the expectations for German, where the particle can only be realized in the stranded position in constructions with transitive verbs, the situation in English is different. In monotransitive constructions in English the particle can be realized either in the stranded position or it can be pied-piped. In ditransitive constructions, on the other hand, the particle cannot be stranded in sentence final position (cf. (8c/d)) and it is realized between the two objects instead (cf. (8a/b)). Hence, the variation that is available in the monotransitive construction in English is not available for ditransitive constructions.

Thus, double object plus particle constructions in German and English provide a perfect test case for GC/MG theory. On the one hand there is free variation in both languages between the realization of the indirect object in either a NP or a PP, on the other hand there is no variation with respect to particle placement

within the grammar of each language, however, the placement of the particle is different in the two grammars and thus a potential candidate for cross-linguistic grammar competition for L2 speakers. So we can now ask how likely an L2 speaker of English with L1 German is to accept the ungrammatical constructions in (8c/d) and we can additionally ask whether there are any significant differences in the acceptance of an L2 English/L1 German speaker between (8c) and (8d), which would provide an indication for the role of competition within the L2.

Additionally, we can ask whether there is any difference in the acceptance ratings for these constructions when the indirect object is replaced by a pronoun:

(9) a. Jack handed them out the prizes.
b. Jack handed the prizes out to them.
c. *Jack handed them the prizes out.
d. *Jack handed the prizes to them out.

Of course, the replacement does not bring about any change in the grammaticality of the constructions at hand (cf. 8/9), and yet, we know that light constituents such as pronouns tend to scramble to the left and thus precede all other constituents. In German these pronouns scramble into the so-called Wackernagel position (Wackernagel 1892), which can roughly be described as somewhere on the left edge of the German middle field. In English monotransitive constructions with particle a similar effect can be observed in so far as the pronoun precedes the particle and cannot occur after it (cf. e.g. Wallenberg 2007):

(10) a. Anna picked it up.
b. *Anna picked up it.

So what we can see here is that, again, the optionality between particle stranding and pied-piping is dissolved in so far as only one option is available, whereas with (non-pro)nominal objects both options are available (cf. 4a/b). What is different this time, however is that the particle can only be stranded in sentence final position as is the case in the ditransitive construction (cf. 7c/d vs. 8c/d). Thus, from the perspective of GC/MG, we can again look into cross-linguistic and language internal competition. So in the context of second language acquisition we can again ask, how likely a L2 English speaker with L1 German is to accept the constructions in (9c/d). From the perspective of GC/MG theory we would expect that a cross-linguistic competition effect from L1 German conspires with the language internal competition in L2 English for particle placement between ditransitive and monotransitive constructions with pronominal objects. Thus, if such an effect exists, the constructions in (9c/d) should be even more readily accepted than those in (8c/d).

With this much in place we can now formulate clear hypotheses for GC/MG theory in double object verb particle constructions in second language acquisition contexts for speakers of L2 English with L1 German. We summarize the most important aspects of the discussion of the data below and postulate two hypotheses and an open research question that are tested in a grammaticality judgement task for double object verb particle constructions of L2 speakers of English with L1 German and L1 English speakers as a control group.

Both German and English allow double object + particle constructions. However, the two languages differ with respect to particle placement, which is related to word order differences between the two languages. In both languages it is possible to replace the indirect nominal object by a pronominal constituent. This replacement does not change word order but should have a stabilizing effect related to leftward scrambling of pronouns in English and more specifically in German: movement to the Wackernagel position. Both languages also allow for an alternative construction in which the indirect object is generated in a prepositional phrase instead of a nominal phrase. The relative ordering of the particle does not change in these constructions, it may, however, be the case that the relative frequency of the two constructions differs from one language to the other. More specifically, we think that the double object construction is more frequently used in German than in English, where the prepositional construction is the default option and the double object construction is the marked option. For convenience the relevant constructions are summarized and exemplified in (11) for English and (12) for German:

(11) a. Jack handed the children out the prizes.
b. Jack handed them out the prizes.
c. *Jack handed the children the prizes out.
d. *Jack handed them the prizes out.
e. Jack handed the prizes out to the children.
f. *Jack handed the prizes to the children out.

(12) a. Hans händigte den Kindern die Preise aus.
b. Hans händigte ihnen die Preise aus.
c. *Hans händigte den Kindern aus die Preise.
d. *Hans händigte ihnen aus die Preise.
e. Hans händigte die Preise an die Kinder aus.
f. */? Hans händigte die Preise aus an die Kinder.

Let us now formulate the hypotheses for testing the role of GC/MG theory in these contexts:

(13) Hypothesis 1:
L2 speakers of English should differ in their judgements from native speakers. More specifically they should prefer the ungrammatical construction in (11c) over the grammatical variant in (11a) (due to the reverse ordering possibilities for the particle in their L1 German (exemplified in (12a) vs. (12c))).

(14) Hypothesis 2:
Replacing the indirect nominal object by a pronoun should improve the acceptability ratings of the ungrammatical construction (11d) over the grammatical construction (11b) (due to the reverse ordering possibilities for their L1 German and the Wackernagel effect (exemplified in (12b) vs. (12c))).

Additionally we can formulate the following open research question:

(15) Research question:
Does language internal competition between the double object construction and the prepositional construction (exemplified in (11e/f) and (12e/f) for English and German respectively) have an impact on acceptability judgements of L2 speakers of English with L1 German?

So the hypotheses in (13) and (14) probe into cross-linguistic effects of grammar competition and the research question in (15) addresses competition effects from language internal variation.

4 Double object verb particle constructions in L2 English

In order to control for the difference between language internal and cross-linguistic variation testing was carried out in two rounds.[2] In the first round we tested the effects of cross-linguistic variation on L2 English L1 German speakers for ditransitive verb particle constructions that take two nominal complements or one pronominal and one nominal complement. Ditransitive constructions in

2 Actually, we conducted even more rounds of testing and at two different institutions (University of Wuppertal and University of Frankfurt). However, the results that are included here come from two separate rounds of testing that were conducted in Wuppertal. For the results from the full study, which cannot be represented here due to reasons of space cf. Bauke (*in preparation*).

which the indirect object is a prepositional phrase were tested separately. We report on results from both tests here.

4.1 Study 1: Nominal and pronominal complements

4.1.1 Participants

We tested two groups. The first group is the experimental group that consists of 184 students enrolled in the BA study program of the Department of English and American Studies at the University of Wuppertal. 164 of these students identified German as (one of) their native language(s). Participants who did not identify German as their mother tongue were excluded from the statistical analysis. Students were aged between 18 and 37 years (M = 22.92, SD = 3.25) and their proficiency level ranges between C1 and C2 in CEFR[3] (measured by 'placement test').

The second group is a control group of 33 participants of native speakers of English. These participants were recruited through private contacts, the age range in this group is between 19 and 73 years (M = 39.15, SD = 12.01). These speakers form a very heterogenous group. Some of them live in Germany and teach English language courses at university. Their native variety of English ranges from Australian English, South African English, Irish, British and American English to Canadian English. Others live in Canada and the US and some of them have an academic background while others do not. Since the grammatical construction investigated in the current study occurs in all varieties of English, the native speaker group is, however, not subdivided any further.

4.1.2 Materials and procedure

Participants had to complete a grammaticality judgement task. They were unaware of the aim of the study and participation in the study was voluntary. Participants were asked to read a series of sentences and provide their

3 CEFR stands for Common European Framework of Reference for Language. Speakers at level C1 and C2 are characterized as proficient users. Further information on the characterization of the proficiency levels and their underlying language competencies can be obtained from the webpage of the European Research Council (https://www.coe.int/en/web/common-european-framework-reference-languages).

reaction to these sentences as immediately and spontaneously as possible. The study contained 48 sentences in total, 24 of theses were experimental items testing participants' judgements of double object plus particle constructions in English. The remaining 24 sentences were fillers[4] and distractors. Half of the test items and half of the fillers and distractors were grammatical, the other half were ungrammatical sentences. Among the test items 12 contained double objects that are full noun phrases, six of them with a particle in sentence final position (i.e. ungrammatical) and six with a particle between the two objects (i.e. grammatical). In the other half of the test items the indirect object consisted of a pronominal item and again half of the sentences were ungrammatical, with the particle in sentence final position and the other half were grammatical sentences where the particle occurred after the pronoun and in front of the direct object, which was expressed in a nominal phrase. So each of the four construction types occurred six times in the study. Examples are provided in (16):

(16) a. Andy cut his brother off a piece of cake. (NP-PART-NP grammatical)
b. Andy cut his brother a piece of cake off. (NP-NP-PART ungrammatical)
c. Andy cut him off a piece of cake. (PRN-PART-NP grammatical)
d. Andy cut him a piece of cake off. (PRN-NP-PART ungrammatical)

No particle verb occurred more than once in the study, although it could not be avoided that the same particle occurred numerous times in the study. In order to counter balance this effect the same particles that were used in the test items were also used in (some of) the fillers. All particle verbs that were used in the test items were (of course) ditransitive verbs and we tried to make sure that none of these particle verb constructions could also be used monotransitively. A full list of all tested verbs is available in (Bauke *in preparation*).

Participants had to rate the acceptability of the sentences on a Lickert scale ranging from 1 to 6, i.e. from absolutely ungrammatical to fully grammatical. Participants were provided with the following information regarding the numerical values represented by the Lickert scale ratings:

4 The fillers were of various types and ranged from monotransitive particle verb constructions with an adjunct phrase to intransitive particle verb constructions with two adjuncts to simple verb constructions with several adjuncts of different types. For reasons of space we cannot go into a detailed analysis of the ratings for the filler sentences, however, a full analysis of this is available in Bauke (*in preparation*).

(17) a. 1 - absolutely ungrammatical
b. 2 - rather ungrammatical
c. 3 - somewhat/slightly ungrammatical
d. 4 - somewhat/slightly grammatical
e. 5 - rather grammatical
f. 6 - absolutely grammatical

The choice for a scale with an even number of choices was deliberate in order to force participants to rate explicitly in favor of un/grammaticality only relativized by a three point scale for each of the two choices. Thus, the original intention behind a grammaticality judgement task of deciding between grammatical and ungrammatical structures could be maintained in this way.[5]

The results were coded according to the numerical values of the Lickert scales that the participants selected.

4.1.3 Results and interpretation

For each of the four constructions the mean value of the acceptability judgements was calculated for the L1 German L2 English speakers (German) and for the control group of native speakers (English). The results are listed in Table 1:

Table 1: Results for all four construction types L1 vs L2 speakers.

	German	English
NP-PART-NP	2.762	5.237
NP-NP-PART	2.373	1.055
PRN-PART-NP	2.481	5.914
PRN-NP-PART	2.589	1.070

A 2x2 repeated measures ANOVA for the two placements of the particle (i.e. in sentence final position and between the two objects) in a double object construction with two noun phrases paired with the two groups of speakers (i.e. L2 speakers vs. native speakers) shows a significant main effect of particle placement $F(1, 195) = 702.833$, $p < .01$. Placing the particle at the end is the dispreferred

5 A pilot study showed that binary ratings between grammatical and ungrammatical, which would be much more appropriate for a grammaticality judgement task, is not suitable because a high number of sentences remained unrated then.

option. Additionally, we find a significant interaction with group $F(1, 195) = 15.439$, $p < .01$, indicating that native speakers' judgements of these constructions differ significantly from the judgements of the L2 English speakers with L1 German. A series of follow-up paired samples t-tests that were conducted to assess within group effects clearly indicate that the judgments for particle placement in the group of L1 German L2 English speakers showed no significant effect. For the native speaker group, however, there was a significant effect of particle placement and the order NP-PART-NP ($M = 17.893$; $SE = 7.294$) was highly preferred over the order NP-NP-PART ($M = 11.751$; $SE = 6.127$; $t(32) = -.499$; $p < .01$). In other words: the results show that L2 speakers of English with L1 German who have a very high proficiency level in English do not differentiate in their acceptability ratings between those double object constructions where the particle is in sentence final position and those where the particle is located in sentence medial position between the two objects. The native speakers on the other hand clearly differentiate between a grammatical construction, with the particle in sentence medial position and an ungrammatical construction where it is in sentence final construction. Figure 1 further illustrates these differences:

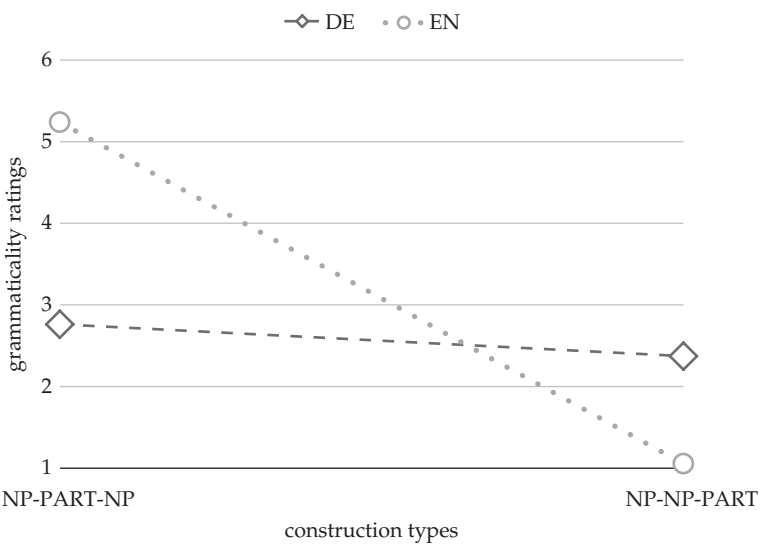

Figure 1: Comparison between L1 and L2 for double object constructions with two NPs.

Along the same lines, we conducted a 2x2 repeated measures ANOVA for the pronominal construction with the particle in stranded position and between the pronoun and the direct object paired with the two groups of speakers (i.e. L2

speakers vs. native speakers). The results again show a significant main effect of particle placement F(1, 195) = 1011.166; p < .01. Placing the particle at the end is the dispreferred option. Additionally, we again find a significant interaction with group F(1, 195) = 40.843; p < .01, indicating that native speakers' judgements of these constructions differ significantly from the judgements of the L2 English speakers with L1 German. We again conducted a number of follow-up paired samples t-tests to assess within group effects. These again clearly indicate that the judgments for particle placement in the group of L1 German L2 English speakers showed no significant effect. For the native speaker group, however, there was a significant effect of particle placement and the order PRN-PART-NP (M = 17.173; SE = 8.819) was highly preferred over the order PRN-NP-PART (M = 12.843; SE = 6.739; t(32) = −522; P < .01). In other words: the results show that L2 speakers of English with L1 German who have a very high proficiency level in English do not differentiate in their acceptability ratings between those double object constructions where the indirect object is a pronoun and where the particle is in sentence final position and those where the particle is located in sentence medial position between the pronoun and the direct object realized as a full NP. The native speakers on the other hand clearly differentiate between a grammatical construction, with the particle in sentence medial position and an ungrammatical construction where it is in sentence final position. Figure 2 further illustrates these differences:

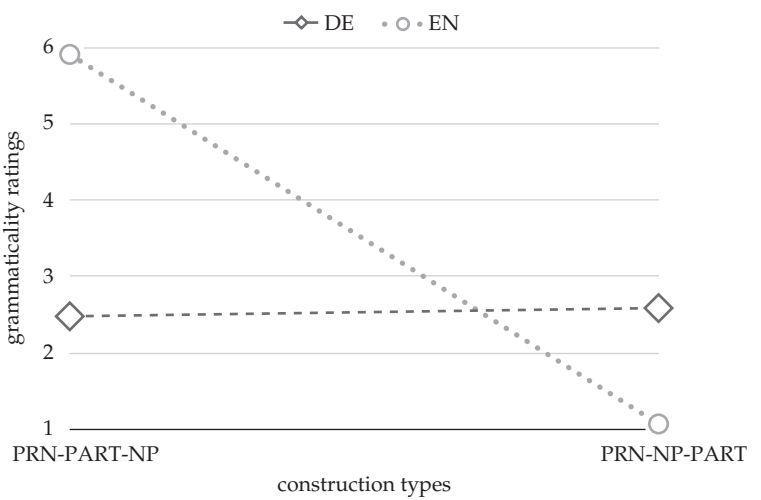

Figure 2: Comparison between L1 and L2 for double object constructions with pronouns – NPs.

Summing up, we can say that L2 speakers of German hardly make any distinctions in their grammaticality judgements of double object plus particle constructions, irrespective of either particle placement or of the nature of the indirect object (i.e. whether it is realized as a full NP or as a pronoun). Thus the first of the two hypotheses formulated above and repeated below for convenience can be confirmed in so far as we find a significant difference between the grammaticality judgements provided by native speakers and those provided by L1 German L2 English speakers. However, the experimental group of L2 speakers did neither prefer nor disprefer any of the two variants tested. Instead both variants received equally low ratings that show no statistically relevant distinctions.

(13) Hypothesis 1:
L2 speakers of English should differ in their judgements from native speakers. More specifically they should prefer the ungrammatical construction in (11c) over the grammatical variant in (11a) (due to the reverse ordering possibilities for the particle in their L1 German (exemplified in (12a) vs. (12c))).

(14) Hypothesis 2:
Replacing the indirect nominal object by a pronoun should improve the acceptability ratings of the ungrammatical construction (11d) over the grammatical construction (11b) (due to the reverse ordering possibilities for their L1 German and the Wackernagel effect (exemplified in (12b) vs. (12c))).

Hypothesis 2 cannot be confirmed. However, when comparing the results in Figures 1 and 2, we can see that replacing the indirect object by a pronoun has a marginal effect in both groups. In the group of native speakers pronoun replacement marginally improves the acceptability rates at the upper and the lower end of the acceptability scale. In the group of L1 German L2 English speakers pronoun replacement leads to an even smaller margin in the scale of acceptability ratings and it reverses the endpoints, which means that for this construction, indeed, the L2 speakers provided marginally higher acceptability ratings for the ungrammatical order of PRN-NP-PART than for the grammatical order of PRN-PART-NP. However, these effects are so small that they are not statistically relevant for the group here and cannot count as a confirmation for Hypothesis 2.

So, since the first hypothesis can only be partly confirmed and the second hypothesis cannot be upheld, the research question formulated above and repeated below for convenience becomes all the more relevant:

(15) Research question:
Does language internal competition between the double object construction and the prepositional construction (exemplified in (11e/f) and (12e/f) for English and German respectively) have an impact on acceptability judgements of L2 speakers of English with L1 German?

It was a deliberate decision not to include any prepositional construction of the type exemplified in (11e/f) in the grammaticality judgement task of the current study. This was done in order to avoid any competition between this construction and the double object constructions tested here. However, the results clearly suggest that it might not be possible to eliminate this competition, at least not for highly proficient L2 speakers of English with L1 German. These speakers, in contrast to native speakers, do not differentiate between grammatical and ungrammatical variants of double object constructions. This might still be attributable to language internal grammar competition between the double object construction and the prepositional construction. The latter is the default construction in English and thus the variant that might be preferred by L2 speakers in any case, thus, the marked variant, i.e. the double object construction, would always receive a lower acceptability rating than the default variant.[6]

In order to test this, we conducted a second round of testing in which the grammaticality judgement task is augmented with the prepositional construction. Additionally, for the L2 English L1 German speakers the study is augmented with double object constructions and prepositional constructions from German. This is done in order to test speakers cross-linguistic ratings for this construction and in order to test whether the double object construction, which is the default candidate in German, is preferred over the marked construction, which is the prepositional construction in German. Before we turn to the second study, the results of the current study are once again summarized in Figure 3.

6 We can exclude that the lack of distinction between the grammatical and the ungrammatical variant is due to an overall poor language proficiency of the speakers that we tested. As already indicated above, all speakers have a proficiency level of at least C1 in English. Additionally, we looked into the ratings for the filler sentences, which were also counterbalanced for grammaticality and here we find clearly distinct markings for the grammatical and the ungrammatical sentences by the L2 English speakers. Their ratings are statistically indistinguishable from the ratings of the native speaker control group. For reasons of space we cannot provide the full statistical analysis for the fillers here, but cf. Bauke (*in preparation*) for details.

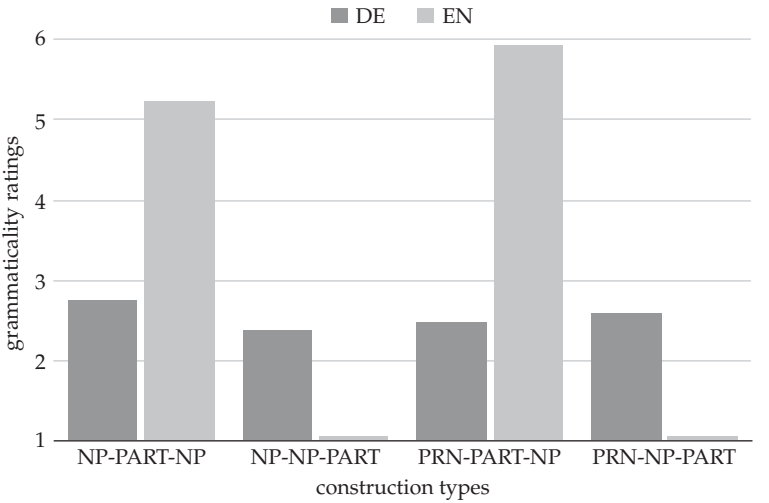

Figure 3: Summary of results.

4.2 Study 2: (Pro)nominal and prepositional complements

As already indicated above, we replicated the original study and included not only prepositional objects for the double object construction but also tested the L1 judgements for L1 German L2 English speakers. Our hypothesis is that if language internal GC/MG within the L2 is relevant here, speakers should assign higher ratings to those double object constructions where one of the objects is realized as a preposition, because this is the default construction in English. Additionally, we expect that speakers distinguish in their ratings between double object constructions where both objects are realized as (pro)nominal constituents and those where one is realized as a prepositional phrase also in their L1. We report on the results below.

4.2.1 Participants

We again tested two groups. The first group is the experimental group that consists of 119 students enrolled in the BA study program of the Department of English and American Studies at the University of Wuppertal. None of these students participated in the first round of testing.[7] 107 of these students identified German as

7 We also were able to collect data from 50 students who participated in the first study so that we are also able to compare the data from this group to the data in the previous section, which

(one of) their native language(s). Participants who did not identify German as their mother tongue were excluded from the statistical analysis. Students were aged between 19 and 30 years (M = 22.10, SD = 1.87) and their proficiency level in English ranges between C1 and C2 (measured by 'placement test').

The second group is a control group of 31 participants who are native speakers of English. These participants were recruited through private contacts, the age range in this group is between 19 and 73 years (M = 38.52, SD = 12.02).

4.2.2 Materials and procedure

Participants had to complete a grammaticality judgement task similar to the one described in Section 3.1. They were again unaware of the aim of the study and participation in the study was voluntary. Participants were asked to read a series of sentences and were advised to provide their reaction to these sentences as immediately and spontaneously as possible. This time the study contained 80 sentences in total. 40 of these were experimental items and 40 were fillers and distractors. Half of the test items and half of the fillers were grammatical, the other half were ungrammatical sentences and half of the test items and half of the fillers were English and the other half were German sentences. The German sentences were all presented after the English sentences and this part of the study was only completed by L1 German speakers, i.e. by the experimental group. The control group rated only the first forty English sentences. Among the test items 10 contained double objects with (pro)nominal constituents. In five of these the particle occurred between the first (pro)noun phrase and the second noun phrase and in the other five the particle occurred in sentence final position. In most cases the first object was realized as a pronominal form rather than a full noun phrase, because the analysis of the data in Section 4.1 showed that these received the highest ratings from L1 and L2 speakers alike. The other half of the English test items contained 10 constructions in which one of the objects was realized as a prepositional phrase. Again five of these sentences were grammatical with the particle between the first (pro)nominal phrase and the prepositional phrase and five were ungrammatical with the particle in sentence final position. So each of the four construction types occurred five times in the study. Examples are provided in (18):

allows for testing the consistency in the ratings – however, the data are not presented and discussed here (cf. Bauke (*in preparation*) for details).

(18) a. Jack handed them out the prizes. (NP/PRN-PART-NP grammatical)
b. Jack handed them the prizes out. (NP/PRN-NP-PART ungrammatical)
c. Jack handed the prizes out to the children. (NP/PRN-PART-PP grammatical)
d. Jack handed the prizes to the children out. (NP/PRN-PP-PART ungrammatical)

No particle verb occurred more than once in the study, although it could not be avoided that the same particle occurred numerous times in the study. In order to counter balance this effect the same particles that were used in the test items were also used in (some of) the fillers.

The distribution of the 20 German test items paralleled the distribution of the English items. 10 were double object constructions with two (pro)nominal constituents and 10 were double object constructions where only one of the objects was realized as a (pro)nominal form, while the other was realized as a PP. In each set half of the constructions were grammatical with the particle in sentence final position, while the other half were ungrammatical where the particle was placed between the two objects. Examples for the German sentences are provided in (19):

(19) a. Hans händigte ihnen die Preise aus. (NP/PRN-NP-PART grammatical)
b. Hans händigte ihnen aus die Preise. (NP/PRN-PART-NP ungrammatical)[8]
c. Hans händigte die Preise an die Kinder aus. (NP/PRN-PP-PART grammatical)
d. Hans händigte die Preise aus an die Kinder. (NP/PRN-PART-PP ungrammatical)

Also in German none of the particle verbs occurred twice, however, the same particle again occurred numerous times in the study. This was again counterbalanced by using the same particles also in (some of) the fillers.

Participants had to rate the acceptability of the sentences on a Lickert scale ranging from 1 to 6, i.e. from absolutely ungrammatical to fully grammatical. Participants were provided with the following information regarding the numerical values presented by the Lickert scale ratings:

8 As one reviewer remarks, the sentences in (19b) and (19d) may not be completely ungrammatical in German. They could possibly be analyzed as examples of right-branch extraction which may be grammatical under specific intonation contours. However, these sentences are markedly different from the examples in (19a) and (19c), which maintain canonical constituent order and are therefore expected to be judged much better than the counterparts in (19b) and (19d) (cf. also discussion in section 3.2.3 below for further comments).

(20) a. 1 - absolutely ungrammatical
b. 2 - rather ungrammatical
c. 3 - somewhat/slightly ungrammatical
d. 4 - somewhat/slightly grammatical
e. 5 - rather grammatical
f. 6 - absolutely grammatical

Again the selection of a scale with an even number of choices was deliberate in order to force participants to rate explicitly in favor of un/grammaticality only relativized by a three point scale for each of the two choices. Thus, the original intention behind a grammaticality judgement task of deciding between grammatical and ungrammatical structures could be maintained this way.

The results were coded according to the numerical values of the Lickert scales that the participants selected.

4.2.3 Results and interpretation

For each of the four English constructions (exemplified in (18)) the mean value of acceptability judgements was calculated for the L1 German L2 English speakers (German) and for the control group of native speakers (English). The results are listed in Table 2:

Table 2: Results for all four construction types L1 vs L2 speakers.

	German	English
NP/PRN-PART-NP	3.15	5.88
NP/PRN-NP-PART	2.73	1.33
NP/PRN-PART-PP	3.57	5.90
NP/PRN-PP-PART	2.62	1.06

A 2x2 repeated measures ANOVA for the two placements of the particle (i.e. in sentence final position and between the two objects) in a double object construction with two noun phrases paired with the two groups of speakers (i.e. L2 speakers vs. native speakers) shows a significant main effect of particle placement $F(1, 137) = 588.626$, $p < .01$. Placing the particle at the end is the dispreferred option. Additionally, we find a significant interaction with group $F(1, 137) = 21.115$, $p < .01$ again indicating that native speakers' judgements of these constructions differ significantly from the judgements of the L2 speakers of English with L1 German.

We additionally conducted a number of follow-up paired samples t-tests in order to assess within group effects. These tests clearly indicate that the judgements for particle placement within the experimental group of L1 German L2 English speakers showed no significant effect. For the native speaker group, however, there was a significant effect of particle placement and the order NP/PRN-PART-NP (M = 29.39; SE = 1.453) was highly preferred over the order NP/PRN-NP-PART (M = 6.65; SE = 2.715); t(31) = 44.588; p < .01). So the results show once again that L2 speakers of English with L1 German who have a very high proficiency level in English do not differentiate in their acceptability ratings between those double object constructions where the particle is in sentence final position and those where the particle is located in sentence medial position between the two objects. The native speakers on the other hand clearly differentiate between a grammatical construction, with the particle in sentence medial position and an ungrammatical construction with the particle in sentence final position. Thus, the results so far clearly replicate the results from the first round of testing, summarized in Section 4.1. Figure 4 summarizes these differences:

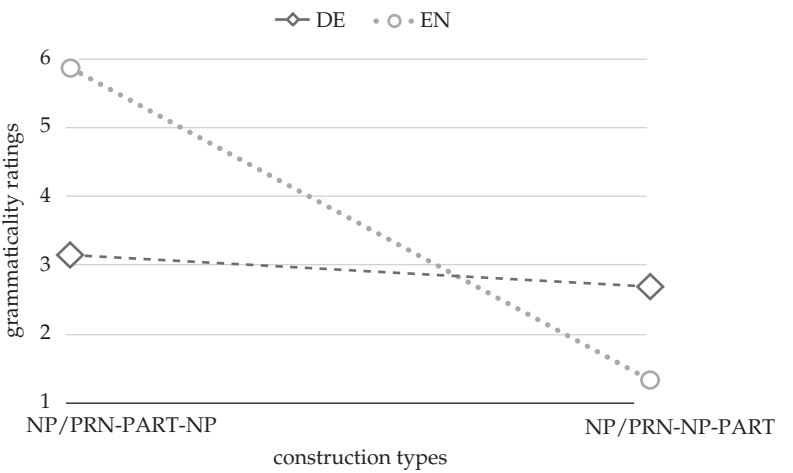

Figure 4: Comparison between L1 and L2 for (pro)nominal double object constructions.

Along the same lines we now conducted a 2x2 repeated measures ANOVA for the prepositional construction with the particle in stranded, i.e. sentence final, position and between the (pro)nominal constituent and the prepositional phrase paired with the two groups of speakers (i.e. L2 speakers vs. native speakers). Once again, the results show a significant main effect of particle placement F(1, 137) = 972.001; p < .01 where placing the particle at the end is again the dispreferred option. Fur-

thermore, we again find a significant interaction with group $F(1, 137) = 8.579$; $p < .01$. So, once again, native speakers' judgements of these constructions differ significantly from the judgements of L2 English speakers with L1 German. Once again, we conducted a number of follow-up paired samples t-tests to assess within group effects and once more there were no significant effects of particle placement within the group of L1 German L2 English speakers. So, once again, L2 speakers did not make a significant distinction between the grammatical and the ungrammatical variant. In effect, these speakers treated the prepositional double object constructions in the same way they treated double object constructions with two (pro)nominal constituents, i.e. without making a clear distinction between grammatical variants with the particle in sentence medial position (between the two objects) and ungrammatical variants with the particle in sentence final position. As expected, the native speaker group, however, showed a significant effect of particle placement for the prepositional double object constructions. The order NP/PRN-PART-PP ($M = 29.52$; $SE = 1.180$) was highly preferred over the order NP/PRN-PP-PART ($M = 5.32$; $SE = 1.249$; $t(31) = -.177$; $p < .01$). So just like in the double object constructions with two (pro)nominal constituents, native speakers distinguish clearly between grammatical and ungrammatical variants also for double object constructions where one of the objects is expressed as a prepositional form. Grammatical constructions with the particle in sentence medial position between the (pro)nominal phrase and the prepositional phrase are rated significantly higher than those constructions where the particle is in sentence final position (i.e. behind the PP constituent) and which are ungrammatical in English. Figure 5 further illustrates these differences:

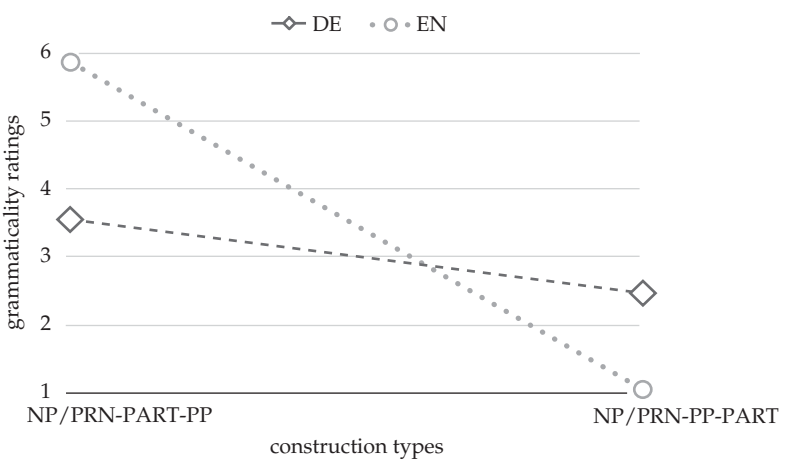

Figure 5: Comparison between L1 and L2 for prepositional double object constructions.

Summing up, we can thus say that L2 speakers of English hardly make any distinctions in their grammaticality judgements of double object plus particle constructions irrespective of either particle placement or whether the two objects are both realized as (pro)nominal phrases or one of them is realized as a (pro)nominal phrase and the other as a prepositional phrase. So, just like in the first round of testing we can confirm a significant difference between the grammaticality judgements of native speakers of English and L2 speakers of English with L1 German. However, the experimental group of L2 speakers still neither preferred nor dispreferred any of the two variants tested in the second round of testing. Thus, these speakers did not differentiate between the default and the non-default variants illustrated in (18). Instead, both variants received equally low ratings, comparable to the ratings reported on in Section 4.1, that again show no statistically relevant distinctions. Hence, factoring in the distinction between the default prepositional double object construction does not have any effect on the acceptability ratings of the participants in this study. This means that language internal grammar competition between the NP-PART-NP and the NP-PART-PP constructions plays no significant role in the assessment of these constructions neither for the group of L2 speakers nor for the group of native speakers (cf. section below for details).[9] The results are summarized in Figure 6 below.

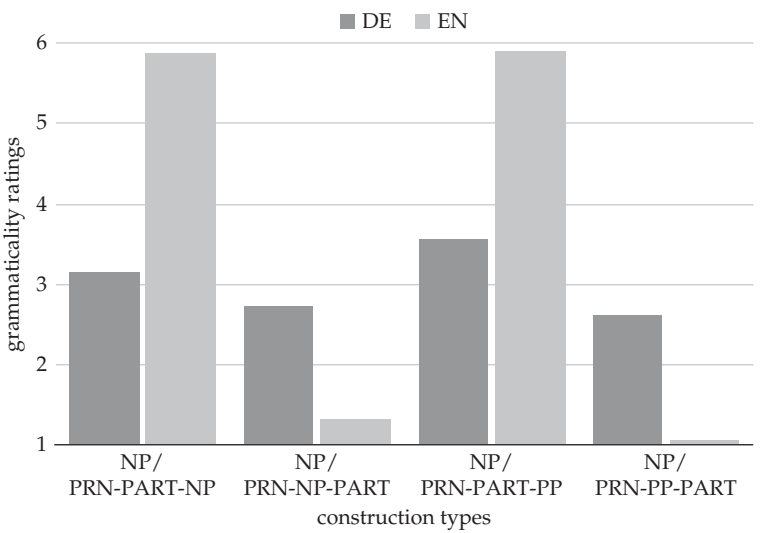

Figure 6: Summary of results.

9 We can exclude once again that the ratings of the L2 speakers are due to poor proficiency of these speakers. Again, all of them passed the placement test and we again analyzed the ratings of these speakers for the filler sentences, where they display a clear and significantly different

So, up to here we can conclude that there are no major differences between the results from the first study and the results from the second study. Native speakers distinguish quite clearly between grammatical and ungrammatical constructions, whereas the L2 speakers with L1 German do not make any statistically significant distinctions between these constructions, irrespective of whether the indirect object is expressed in a noun phrase or a prepositional phrase and irrespective of whether the nominal objects are pronominalized or not. In a final step, we can now analyze the ratings of the experimental group for the German sentences (exemplified in (19)). This then allows us to compare both groups that we tested in their ratings of these constructions for their native languages. Here the following aspects are of relevance for our assessments:

i. differences between L1 English and L1 German speakers in the judgements of sentences in their native languages
ii. language internal differences between L1 judgements of the two types of double object constructions for the two groups of speakers.

This is what we will now turn to and we will start with a comparison between the ratings from the control group (i.e. L1 English speakers) to the ratings of the German sentences from the experimental group (i.e. L1 German speakers). These are listed in Table 3:

Table 3: Results for L1 speaker groups.

	L1 German	L1 English
NP/PRN-PART-NP	2.09	5.88
NP/PRN-NP-PART	5.72	1.33
NP/PRN-PART-PP	2.14	5.90
NP/PRN-PP-PART	5.32	1.06

Here we can see that native speakers of English are somewhat stricter in ruling out ungrammatical constructions in their native language than native speakers of German are for German. However, other than that the ratings for the two speaker groups show no difference and there is no statistically significant effect between the two speaker groups in their ratings of grammatical and ungrammatical constructions in their native languages. A further illustration is provided in Figure 7.

rating for grammatical and ungrammatical sentences that parallels the ratings of the native speaker control group for these constructions. For reasons of space we do not go into the details of the statistical analysis here.

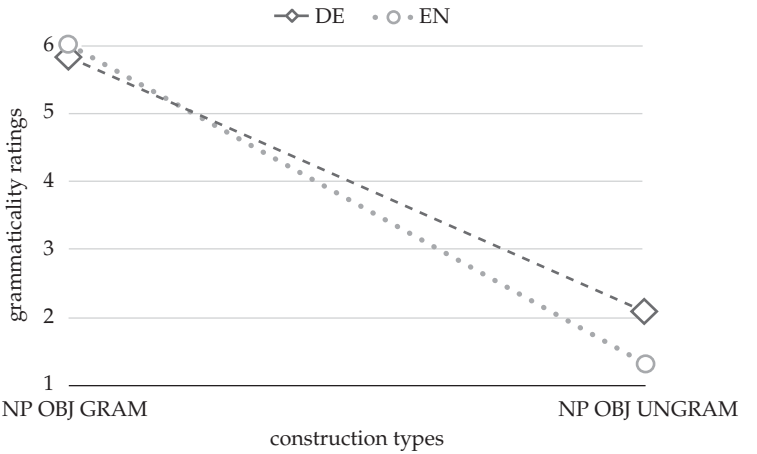

Figure 7: Comparison between L1 German and L1 English for (pro)nominal double object constructions.

So just as much as native speakers of English accept the double object construction with two (pro)nominal objects where the particle is placed between the two objects and reject the order in which the particle is in sentence final position, native speakers of German accept this latter construction in their native language and reject the ungrammatical construction where the particle is placed between the two objects.

Basically the same picture emerges for those constructions where one of the objects is replaced by a PP, as Figure 8 illustrates.

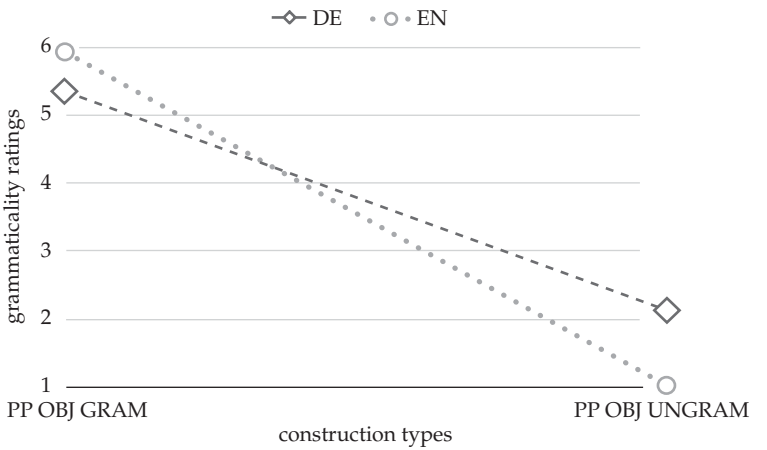

Figure 8: Comparison between L1 German and L1 English for prepositional double object constructions.

Again no significant differences between the two groups of native speakers can be observed. And the results are summarized in Figure 9.

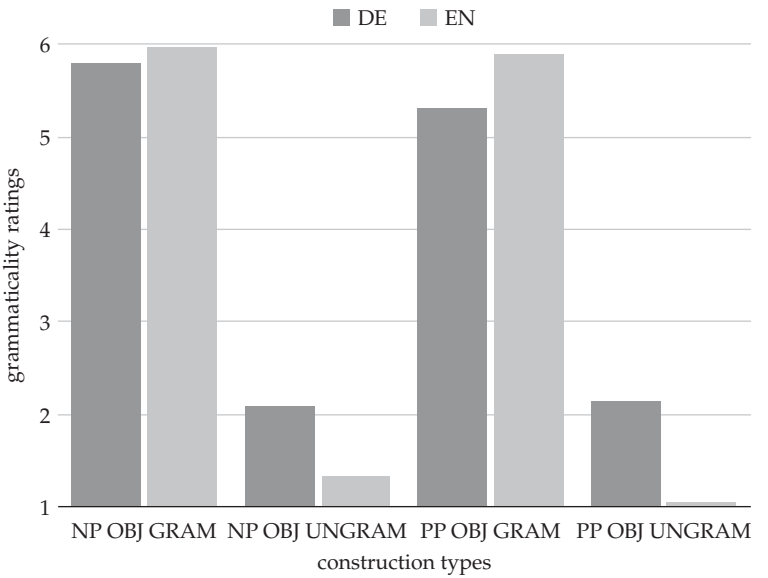

Figure 9: Summary of results.

Thus, we can conclude at this point that both speaker groups provide very solid judgements on the grammaticality and ungrammaticality of these constructions in their native languages. There are no statistically significant differences between the two speaker groups and there is only a very marginal difference between the German L1 speakers and the English L2 speakers in so far as the German L1 speakers are somewhat more reluctant to reject an ungrammatical construction in their native language. Although this is not statistically relevant, we believe that it can possibly be attributed to two factors. The first is that German word order is somewhat more flexible than English word order and there might be contexts in which the ungrammatical construction is acceptable (i.e. in certain pragmatic contexts and with specific intonation contour). Secondly, the demography of the two groups that we tested may play a role. The age range of the English native speakers is much wider and includes a significant amount of older speakers, which tend to be more conservative in the ratings and many of these speakers are language teachers and thus might apply a more normative scale to such ratings than the more homogeneous, younger university students that were tested in the L1 German speaker group.

5 Conclusion

We started our investigation into the role of grammar competition in double object plus particle constructions with a grammaticality judgement task in which L2 English speakers whose L1 is a V2 language had to rate double object constructions. In a first step we looked into the ratings for double object constructions in which both objects are noun phrases compared to those constructions in which one object is a noun phrase and the other is a pronominal form. We found that native speakers of English clearly differentiate between grammatical and ungrammatical particle positions in both the nominal and the pronominal constructions, although there is only a very marginal difference between the grammatical and ungrammatical ratings of nominal objects and pronominal forms respectively in the sense that pronominal forms receive minimally higher ratings. L2 speakers of English on the other hand do not differentiate between grammatical and ungrammatical variants of these two constructions and rate all of these constructions equally low. Nevertheless, these L2 speakers of English can provide significant differences in the ratings of other constructions in L2 English.

These results partly confirmed our initial hypothesis that double object + particle constructions are a challenge for L2 English speakers. In order to further solidify these results and to evaluate their relevance for a grammar competition analysis, we conducted a follow-up study in which we grouped the double object constructions with two nominal objects and those with one nominal and one pronominal object together, which we were able to do, because the first study revealed that not even native speakers make a relevant distinction between these two variants. Grammatical and ungrammatical variants of this double object construction with two (pro)nominal constituents were then compared to double object constructions in which one constituent is a prepositional phrase, while the other remains a (pro)nominal constituent. This was done in order to be able to test the role of language internal competition between the two versions of double object constructions (PRN/NP – NP vs. PRN/NP -PP). Additionally L1 speakers of German were tested in German for the same construction types (and the same filler types). This was done in oder to be able to compare L1 ratings of German speakers to those of native speakers of English. The results showed that native speakers of English do not make any relevant distinctions between two (pro)nominal double object constituents and one (pro)nominal and one prepositional double object constituent. Native speakers of German as well do not display any relevant distinctions between these two variants in their native language. Actually both L1 speaker groups are equally consistent in their L1 ratings for these constructions and provide clear and significant distinctions in their ratings of grammatical and ungrammatical constructions. So language internal competition between

PRN/NP – NP and PRN/NP – PP variants of double object constructions can be excluded, while at the same time particles can be realized in these constructions equally well (in complementary positions, of course). Additionally, L2 speakers of English do not differentiate in their L2 ratings of these constructions from their L2 ratings of the double object constructions tested in the first study. Thus, the double object construction with two (pro)nominal constituents is still rejected, i.e. rated equally low, regardless of particle placement and the double object construction with one (pro)nominal and one prepositional constituent is rated along the same lines, again regardless of particle placement, although particle placement in the ratings of the L1 constructions of these speakers provided a clear difference and parallels the ratings of English native speakers.

This provides us with an interesting angle on what actually stands in competition in the grammars of L2 speakers. Very obviously any type of double object plus particle construction is difficult for L2 speakers. Thus, the surface linear arrangement of constituents in double object plus particle constructions causes a challenge for L2 speakers of English but it is not directly influenced by the surface linear arrangement of these constituents in the native, i.e. German, language of these speakers, where the only difference would be the position of the particle.

Suppose now that particle constructions in German and in English are realized differently. While the particle is realized together with the verb in a low VP position in German, in English the particle is realized higher, potentially in what Keyser and Roeper (1992) identify as the abstract clitic position and suppose further that it is these different realizations that cause problems for L2 speakers. L1 speakers of a V2 language like German would analyze the particle construction in English with their German grammar, i.e. assume that the particle is base generated low inside the VP. This, however, blocks the realization of a second object inside the VP in English and thus leads to a rejection of the whole construction as ungrammatical. In German on the other hand the verb simply moves to the C domain, as usual, and strands the particle in V-final position, i.e. to the right of all objects. Now, even if L2 speakers of English 'know', that stranding the particle in V-final position in English is not an option, they still cannot derive the grammatical Object – Particle – Object order for English, because the particle in English would need to move as well, or alternatively, and possibly more likely, the object base generated inside the VP would need to be extraposed across the particle and to the right, i.e. in sentence final position. This, however, is only possible if the particle is generated in a position inside (or possibly even outside) the VP that is higher than the position for the two objects.

So here the competition is not between seemingly similar surface orderings of constituents but between grammatical operations of base generation of the particle and displacement of this particle and the objects inside the VP. Thus,

competition here is at a much deeper level and it is thus no more surprising that L2 speakers have a much harder time acquiring this construction.

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Josef Bayer and Constantin Freitag

How much verb moves to second position?

Abstract: In this chapter, it is shown that finite verbs which are attracted by Verb-Second (V2) movement are reconstructed into their base position for interpretation. In fact, the lexical part of the finite verb is never interpreted in its fronted position. We present two groups of empirical findings which strongly support this conclusion. The first group provides grammar-internal evidence for reconstruction, the second group shows that the verb's reconstruction can also be traced in the process of human sentence comprehension. The German verb *brauchen*, which happens to be a negative polarity item and thus needs to be interpreted in the scope of negation, provides evidence for the reconstruction process in on-line comprehension. Our discussion is embedded in a review of sentence processing in German. It is shown how processing can be efficient despite the fact that the verb's semantic contribution may be delayed. Our account of V2 in grammar and parsing supports a rather tight link between the competence grammar and the dynamics of sentence processing.

1 Introduction

With the exception of modern English, the Germanic languages share the remarkable property that the finite verb appears in a higher position in the root clause than in the embedded clause. In German, a language that has retained the head-final structure of the older Indogermanic languages, this is most visible due to the fact that the finite verb appears in sentence-final position in the embedded clause whereas it appears in first or second position in the root clause.

Note: Parts of this article have been presented in various colloquia in Aarhus, Konstanz, Munich, Wuppertal and Köln, at CUNY 2015 in Los Angeles, and the XII. International Symposium of Psycholinguistics in Valencia. We would like to thank the respective audiences for discussion and in particular an anonymous reviewer for useful comments. Additionally we thank Peter Culicover, Anna Czypionka, Laura Dörre, Sam Featherston, Christoph Scheepers, Barabara Tomaszewicz, and Yvonne Viesel for helpful comments. We gratefully acknowledge the funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement no. 613465 within the AThEME project.

Josef Bayer, University of Konstanz
Constantin Freitag, University of Cologne

https://doi.org/10.1515/9781501508141-003

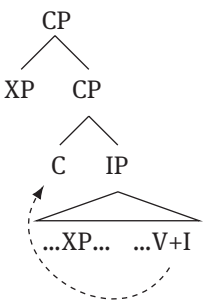
(1) a. ... dass Johann Socken *kaufte*
that Johann socks bought
'... that Johann bought socks'

b. *Kaufte* Johann Socken?
bought Johann socks
'Did Johann buy socks?'

c. Johann *kaufte* Socken
Johann bought socks
'Johann bought socks.'

Following a long tradition of reseach that dates back into the late 19th century, the Principles and Parameters approach to generative syntax suggested for German a phrase structure roughly like in (2), in which C is a functional head position that, in the embedded clause hosts a complementizer and in the main clause, the finite verb which has picked up its finiteness features from a clause-final functional head called I (for inflection).

(2)



Any theoretical detail aside, the important point here is that the finite verb (here V+I) is "actually" in clause-final position and comes to stay in V2 (or V1) position only as a result of movement by which the verb is taken out of its lexical projection and is inserted into a higher functional head position, conventionally called the "C-position" because it shares a number of properties with the position in which one usually finds the complementizer.

Two important properties of V2 are that (i) it is exclusively the *finite* verb which undergoes this shift, and that (ii) it is only the minimal finite verb that moves. According to Kremers (2009), it is a prosodic word ω. In particle verbs like *anrufen*, the particle *an* is a separate prosodic word. The particle verb as a whole is a phonological phrase φ. The finite particle verb *anruft* is then as in (3a). (3b) shows that the C-position is filled only with the ω-element that carries the finiteness features.

(3) a. ($_{\varphi}$ ($_{\omega}$ an) ($_{\omega}$ ruft))
b. [$_{CP}$ er [$_{C'}$ ($_{\omega}$ ruft) [$_{IP}$ mich morgen … ($_{\omega}$ an)]]]

One is under the strong impression that V2 has to do with semantics only in so far as the finiteness feature or feature bundle consisting of tense, number, person and mood should be in the higher position. The fact that the particle makes an essential contribution to the meaning of the verb in a particle verb construction, as illustrated in Section 2.1.1, appears to be totally irrelevant to the V2 order. To express it more radically, V2 is only accidentally related to the verb, namely by the (Indoeuropean) property that the finiteness feature is spelled out on the verb.[1] Morphological integrity ("You must not linearly separate the (verb) stem from the inflectional morpheme!") will then condition the verb to travel along with the finiteness information encoded in the inflectional morpheme.[2] This process has become known as *Generalized Pied Piping*, the smallest consensus that can satisfy both the PF and the LF interface (see Chomsky 1995: 264). If this line of thought is on the right track, we land at the conjecture in (4), which we will in fact defend in the rest of this article.

(4) **Conjecture about V2**
The finite verb that appears in 2nd position in a V2 language is in this position only for the reason of generalized pied piping. Even when it is perceived in V2-position, its lexical part is evaluated in its base position, i.e. in German in clause-final position.

1 See e. g. König & Gast (2012: 194) who advocate *finite-second*, rather than *verb-second* as the accurate description.

2 In Warlpiri as described by (Hale 1983), finiteness is obviously morphologically disconnected from the verb. Warlpiri is an X2 language albeit not a V2 language. Why? Because the 2nd position is taken by finiteness morphology whereas the verb can be elsewhere. Legate (2008) argues that the aspect and agreement markers in Warlpiri are (second position) clitics, that attach either to auxiliaries or complementizers.

Ngajulu-rlu	*ka-rna-ngku*	*nyuntu nya-nyi*
I-ERG	PRES-1SUBJ-2OBJ you	see-NON.PAST
'I see you'		(Hale 1983: 18)

Tohono O'odham (Papago) is another V2 language in which the finiteness marking is always realized as an auxiliary in second position and never through inflectional affixes on the lexical verb. Consequently in O'odham, the lexical verb never occupies the second position (Zepeda 1983, Miyashita 2006).

What kind of movement is V2? Difficult to say. V2 has one clear property of movement: it leaves a *copy*.[3] We will give ample demonstration of this. On the other hand, it had been debated whether V2 is head movement. There is no evidence for intervention in the sense of Relativized Minimality (Rizzi 1990) as it would be expected under the Head Movement Constraint (Travis 1984). Müller (2004) goes as far as suggesting that V2 is actually movement of a vP from which everything but the finite verb has been evacuated.[4] Whatever has been suggested along these lines, we will not go into any of these details. We will rather stick to the traditional assumption that V2 is a special kind of head movement, and that this movement leaves a copy in the base position.

The concept that a moved element is interpreted in a lower position, from which it has been moved at an earlier stage of the derivation, is known as *reconstruction*, see Sportiche (2006) for a comprehensive overview. Interestingly Sportiche (2006: 69–72) notes that preposed predicates must always, obligatorily reconstruct into their base position, an observation known as the *argument/predicate asymmetry* (Barss 1986: 186–194, Heycock 1995). Hence despite V2 movement, there is independent evidence that verbal elements have to be interpreted in their base position.

In the following sections, this will be demonstrated with selected data from German, some already known, others new. Hopefully, we can convince the readers that all of them speak in favor of (4). We will begin with empirical observations that support the two subclaims of (4), namely that the C-position is not the locus of lexical interpretation (Section 2.1), and that the lexical meaning of the verb must be evaluated in its base position (Section 2.2). In Section 3 we will first give an overview of previous sentence processing studies and show that they are in line with the conjecture in (4) before we present a self-paced reading study that successfully reveals the predicted processing correlates of the reconstruction process. In Section 4 we will discuss some consequences of reconstruction on the comprehension process in German before we end with a conclusion in Section 5.

3 According to (Chomsky 1995: 206; 251ff), a trace of movement is such an inaudible copy of the moved constituent.

4 Phrasal movement instead of head-movement would kill the connection that researchers, most prominently Jacob Wackernagel (1853–1938), traced between V2 and cliticization; see especially Anderson's (1993) important contribution.

2 Theoretical investigation of V2-movement

2.1 Closer inspection of the C-position: Challenging an early lexical contribution

2.1.1 Particle verbs

Given the split that V2 induces in the PF-representation of particle verbs, we face a completely unexpected constellation. Parts of the lexical representation of the verb are not only non-adjacent, the linear distance between them can, in principle, be infinitely large.

(5) Johann *rief* den Mann, [der ..., nachdem jemand, [der ...]], ... *an*.
Johann called the man who after somebody who at
'Johann called the man [who ... after somebody [who ...]] ....'

V2 looks like a blatant violation of Behaghel's first law which says that "mentally closely related elements appear side by side".[5] While many particle verbs are formed according to rules of semantic compositionality, there are various particle verbs which resist the Fregean principle. Particle verbs such as *an+hören* (*at+listen*, 'listen to'), *zu+hören* (*to+listen* 'pay attention by listening', *auf +steigen* (*up+climb* 'climb up'), *ab+steigen* (*down+climb* 'climb down') exhibit more or less transparent semantic compositionality; *anhören* is some kind of listening, and so is *zuhören*; *aufsteigen* is some kind of climbing, and so is *absteigen*. However, this is not the case in the following.[6]

(6) a. auf+hören
up listen
'to stop'

b. an+fangen
at catch
'to start'

They are entirely non-compositional. *Aufhören* is not some sort of listening, and *anfangen* is not some sort of catching. The meaning of these verbs is like

5 "das geistig eng Zusammengehörige auch eng zusammengestellt wird" (Behaghel 1932: 4, § 1426) [english translation in the text above J. B.]

6 There are clearly more. For all of them, their meaning has to be stored holistically.

the meaning of idioms. For idioms it is established that they can only be split into pieces if these pieces relocate into a contiguous D-structure.[7] Idiosyncratic meaning does, of course, not prevent these verbs from adhering to V2-movement. Thus, especially for them, V2 looks like a completely dysfunctional representation. Bierwisch (1983: 146–147) points to semantic ambiguities which can arise when such verbs are being used. Consider his well-chosen example of a V1-construction in (7).

(7) Hört der Pianist ... noch vor der Probe {zu üben
listens the pianist yet before the rehearsal to practicing
auf+~~hört~~/ die Bänder an+~~hört~~}?
up the tapes at
'Does the pianist ... {stop practicing/listen to the tapes} before the rehearsal?'

As Bierwisch points out, the space which is signalled by the dots can in principle be of arbitrary length. Nevertheless, the variant of example (7) in which the resolution terminates in the non-compositional meaning 'to stop' does not present an intuitively noticeable semantic parsing problem.

The solution to the problem of particle verbs must be sought in the syntax of V2. If it is indeed the case, that the minimal finite verb leaves a copy in the clause-final position and appears in the C-position for the only reason of activating the finiteness features (for whatever illocutionary purposes), the verb as a lexical element is interpreted in the position of the copy. Regular semantic composition is then possible in agreement with Behaghel's first law, and the idiomatic or idiosyncratic meaning of opaque verbs like those in (6) is established in an unspectacular way. Last not least, the semantic resolution of local ambiguities as seen in (7) will be delayed until the base position of the finite verb (i. e. its copy) can be activated.[8]

7 *The shit seems to hit the fan* is ok because the D-structure is *seems* [*to* [*the shit hit the fan*]] (see Hornstein et al. 2005: 81–84).

8 From a processing perspective, one could expect a garden path effect. However, garden paths do not arise for reasons of semantic ambiguity but for reasons of revisions of syntactic structure. The example in (7) does not involve any such syntactic revision, see also Section 4, in particular footnote 31. This does not seem to be common currency, as is demonstrated by the inclusion of lexical ambiguity in the definition of *garden path* in Glück & Rödel (2016: 220).

2.1.2 Periphrastic *tun*

Certain registers or dialects of German have the possibility of inserting *tun* ('to do') as the carrier of finiteness morphology.[9]

(8) a. Ich glaube, dass der Johann grade den Müll hinunter
I believe that the Johann now the garbage down
tragen tut.
carry does
'I believe that Johann is right now carrying the garbage down.'

b. Der Johann tut grade den Müll hinunter tragen
the Johann does now the garbage down carry
'Johann is right now carrying the garbage down.'

Unlike *do* in English examples of *do*-support, German *tun* appears to retain agentive semantics. It requires a *v*P that is headed by an activity verb such as *tragen* in (8). Closer inspection reveals, however, that it is quite compatible also with stative verbs as long as these can be interpreted as stage-level predicates.[10] This is the case in (9):

(9) Die Clarissa tut den ganzen Tag auf dem Sofa liegen.
the Clarissa does the whole day on the sofa lie
'Clarissa is lying the whole day on the sofa.'

9 For details of this construction see Abraham (2013), Abraham & Fischer (1998), Schwarz (2004), and Bader & Schmid (2006) among various others. There is a tendency for *tun* to occur in the C-position, but its occurrence in clause-final position, as in (8a), is by no means ungrammatical. A reviewer disagrees with our judgments but surprisingly accepts (10a) and (10b) below. For this reviewer, periphrastic *tun* is not possible in clause-final position. It is, however, easy to find such examples in great number on the internet and respective corpora, such as (i), one of more than 200 hits in the DeWaC corpus (Baroni et al. 2009).

(i) *So ist es dafür nicht ausgelegt, dass man sich das spritzen tut.*
'So it is not made for injecting it.' (DeWaC: #152774805)

10 Maienborn (2003: 62–63) uses the incompatibility with the *tun*-periphrasis as a heuristic to identify Kimian statives. She also notes that this contrast vanishes in VP-topicalization (see also Rothmayr 2009: 30–31).

Tun is incompatible with an individual-level predicate such as *to own, to resemble, to lie on a lake* etc., illustrated in (10).[11]

(10) a. * Der Johann tut einen guten Charakter besitzen.
the Johann does a good character own
'Johann has a good character.'

b. * Der Johann tut seinem Vater ziemlich ähneln.
the Johann does his father much resemble
'Johann resembles his father quite a lot.'

c. * Konstanz tut am Bodensee liegen.
Konstanz does at-the Bodensee lie
'Constance lies at Lake Constance.'

While there may also be further semantic restrictions, this diagnostic seems to be sufficient for the following argumentation. Notice first that the verb *tun* in V2-position will under our previous assumptions invariably appear in clause-final position for the purposes of core syntactic computation. As such it displays its semantic effects which may be compatible with the predicate as in (8) and (9) or not as in (10). Interestingly, the semantics of *tun* can be suspended. This is the case when the predicate has been moved to Spec-CP such that no finite verb would be left to satisfy the V2-requirement. In this case, *tun* steps in as a last-resort option, and it does so without displaying any lexical semantic effect.[12] Consider the following well-formed versions of (10). They have been slightly adjusted for stylistic reasons.

11 Yvonne Viesel (p.c.) confronted us with the following song text:

(i) *Schön ist ein Zylinderhut,/ juppheidi, juppheida,/ wenn man ihn besitzen tut, / juppheidi, heida.*
'Nice is a top hat juppheidi juppheida if you do it own juppheidi juppheida.' https://www.lieder-archiv.de/schoen_ist_ein_zylinderhut-notenblatt_100096.html

We assume that in this genre, rhyme can easily win over aktionsart. We found another counter example with *ähneln* 'to resemble' which seems to be the most acceptable of the three verbs in (10). Nevertheless the contrast to examples like (8) and especially (11) remains robust.

(ii) *Kennt wer ein Spiel was Aion stark ähneln tut?*
knows anyone a game that Aion strongly resemble does
'Does anyone know a game that strongly resembles Aion?' https://board.de.aion.gameforge.com/index.php/Thread/3060-Server-down/?pageNo=7

12 See Bayer (2017) for an explanation of semantic suspension that goes beyond this isolated case.

(11) a. [Einen guten Charakter besitzen] tut der Johann auf alle Fälle.
a good character own does the Johann in any cases
'Johann has a good character in any case.'

b. [Seinem Vater ähneln] tut nur der Johann.
his father resemble does only the Johann
'Only Johann resembles his father.'

c. [Am Bodensee liegen] tut Stuttgart zum Gück nicht.
at-the Bodensee lie does Stuttgart luckily not
'Luckily, Stuttgart does not lie at Lake Constance.'

A semantic conflict would invariably result if *tun* were semantically "reconstructed" into the clause-final position. The fact that such a conflict is absent proves that *tun* is inserted in V2-position as a default operation. The presence of *tun*, in this case, reduces to nothing else but the presence of the finiteness features in C. Here, the German *tun*-construction is comparable to English *do*-support, which demonstrably lacks the semantics of an action verb.[13] The desemantization of *tun* is only possible with *tun* in second position, never with *tun* in clause-final position. This proves that the locus of semantic interpretation of the finite verb is the clause-final position.

Thus, we have another important piece of evidence that in all the regular cases in which the finite verb is in V2-position, it is reconstructed into the clause-final position, – hard to believe from the viewpoint of common sense but inevitably true in the abstract world of grammar.

13 Consider the striking difference between (i) and (ii) and the even more striking similarity between (i) and (iii).

(i) *Does he know French?*
(ii) ** Tut er Französisch (sprechen) können?*
does he French speak able to
(iii) *Französisch (sprechen) können tut er auf alle Fälle*
French speak able to does he on all case
'In any case he is able to speak French.'

We notice a certain speaker variation that would deserve further investigation. What is really relevant here, however, is the difference between (ii) and (10) on the one hand and (iii) and (11) on the other. While the former are between dubious and downright ungrammatical, the latter are perfect throughout.

2.1.3 Verb doubling

What we learned in the previous section about periphrastic *tun* can be supplemented with a look at language variation. A number of German dialects as well as Yiddish show verbal doubling. The infinitival form of the verb (or a projection of it) is in the Vorfeld (Spec-CP) and the verb additionally appears in its finite Form in V2-position (C). Fleischer (2008) calls this construction *Topikalisierte Infinitivverdoppelung* (topicalized infinitive doubling). It is rather easy to see that the doubling strategy is an alternative to periphrastic *tun*. Among the German dialects, this construction appears in the Berlin dialect as well as in archaic peripheral varieties of Prussian on the northern end and high Alemannic of Graubünden on the southern end, as well as in diasporic German minority dialects which have survived in the former Soviet Union. Examples from Fleischer's collection are given in (12) and (13). The exact sources can be found in Fleischer's article.

(12) Prussian

a. Schaden schadet ihm das nichts.
harm.INF harm.3SG him that nothing
'This does not harm him.'

b. Schnifke schnûwe schnöfft hei nich, man Branntwîn
snuff snuff.INF snuff.3SG he not but brandy
sûpe söppt hei sêr.
guzzle.INF guzzle.3SG he very
'He does not snuff tobacco but he guzzles a lot of brandy.'

c. aber ihr redet bloß und geben gebt ihr nichts
but you talk only and give.INF give.2PL you nothing
'You only talk and talk but never give anything'

(Fleischer 2008: 245–247)

(13) a. Alemannic (Splügen, Davos)
Syn bischt schoon albig der glych verdamt Schelm!
be.INF are.2SG still always the same damned rogue
'You are still the same old rogue!'

b. Alemannic (Gressoney, Aosta Valley)
Weerchu weerchut=er weenig.
work.INF work.3SG=he little
'He works little.' (Fleischer 2008: 248–249)

Under the assumption that the verb in V2-position is semantically relevant, these constructions look bizzarre. Why would one want to repeat a verb or the verbal part of a predicate?[14] Given our current findings, the doubled verb is nothing else but the host of the finiteness features that must be positioned in C in order to fulfill the V2-constraint. Since due to the Stranded-Affix-Filter[15] the inflectional morpheme cannot be uttered as such, there must be a lexical carrier. While in Standard German this carrier is *tun*, the dialects under consideration use the lexical form that appears in Spec-CP. In this respect, the doubling strategy corresponds directly to the default *tun*-insertion. Nevertheless, a problem may emerge from the fact that the finite verb in C can be any verb. Thus, unlike *tun*, the verb is not – at least not in an immediately plausible sense – a default. One may be tempted to believe that the finite verb is moved from its clause-final base position. As such its copy would be interpreted. The immediate consequence would be that the examples are weird because the verb would indeed be interpreted twice. How can this consequence be avoided? Assume that the verb in clause-final position is an infinitive or a verbal projection of the infinitive. This form is moved to Spec-CP. We assume the copy theory of movement as suggested by Chomsky (1995); the trace is actually a phonetically silent copy of the displaced element and as such accessible to semantic interpretation.[16] The purpose of fronting seems to be topicalization in the sense of highlighting or emphasizing the predicate. The lexical semantic interpretation is performed in the position of the copy. Now, the strategy of the doubling dialects must be that instead of inserting *tun* in C, these dialects insert a finite version of the non-finite verbal form in Spec-CP. This finite form must conform to the usual requirement of V2, namely that the lexical element is the minimal prosodic word. Consider the following pair.

(14) a. Sein Zimmer aufräumen räumt er nie (auf).
his room tidy.INF tidy.3SG he never PART
'He never tidies up his room.'

b. * Sein Zimmer aufräumen aufräumt er nie
his room tidy.INF tidy.3SG he never

14 Of course, there are languages in which the verb undergoes doubling, sometimes reduplication, for reasons of expressing progressive aspect, intensity of action etc. Such reasons can be safely excluded in these cases. Moreover, verbs like *snuff* or *work* in (12) and (13) do not take infinitival complements, i. e. self-embedding is excluded.

15 Stranded-Affix-Filter: "A morphologically realized affix must be a syntactic dependent at surface structure." (Lasnik 1981: 162)

16 For details of the copy theory of movement see Nuñes (2011).

(14b) is clearly deviant. Doubling concerns exactly the minimally licit carrier of finiteness, nothing more. Verb doubling deserves a detailed theoretical investigation of its viability in a strictly derivational system. Such an investigation is beyond the focus of the present chapter. Let us for the time being suggest that the non-finite verb X (or some projection of it) is moved to Spec-CP, leaving a copy, and that a minimal finite form of X, X_{fin}, is inserted in C. This step does not conform to cyclic movement. It applies after the CP-cycle has been completed. Although other technical solutions come to mind, we think, this is a plausible and defendable way of putting it. The acyclic insertion of the finite verb form is a last resort step of repair that serves nothing but the satisfaction of the V2-constraint. While V2 is usually hard-wired in the bottom-up derivation, acyclic insertion is a local repair that applies only in case the standard mechanics of verb movement is unavailable. According to Jürg Fleischer (p. c.), his data collection does not contain a single example of doubling of the verb in its clause-final position. In fact all such examples seem to be thoroughly ungrammatical.

(15) a. * Ich glaube, dass ihm das nichts schaden schadet
I believe that him this nothing harm.INF harms.3SG

b. * Ich glaube, dass ihr nichts geben gebt
I believe that you nothing give.INF give.2PL

c. * Ich bin froh, dass Stuttgart nicht am Bodensee liegen liegt
I am glad that Stuttgart not at-the Bodensee lie.INF lies.3SG

The data in (15) show that the doubling strategy must not be equated with unmotivated PF-style doubling. The existence of V-doubling in dialects is rather another strong piece of evidence in favor of the conjecture in (4). The finite verb in V2 is not semantically interpreted where we see it but rather in its underlying position. With respect to doubling, this means – in full analogy to the corresponding cases with *tun* – that the lexical stem of the finite verb is not interpreted at all. The conclusion appears to be radical, but it is nothing but a logical consequence.

2.1.4 Frisian *wer*-insertion

In another West Germanic variety, we find additional evidence which indicates that the lexical content of the verb does not need to appear in the C-domain but

only the finiteness features. Karrharde North Frisian[17] exhibits a periphrastic verbal construction with a finite auxiliary *wer-* in V2-position and a finite thematic verb in clause-final position (Hoekstra 2016). Like the *tun*-periphrasis, this construction appears in declaratives, *wh*-interrogatives polar interrogatives, and imperatives, as shown in (16). Moreover, Hoekstra (2016) argues that *wer-* is a reanalyzed complementizer that functions as a semantically empty auxiliary. This assumption predicts all its properties: restriction to V2-position (C-position), complementary distribution with other auxiliaries in V2-position, no semantic/pragmatic restriction, and the double marking of finiteness on the auxiliary and the thematic verb. Due to its origin as a finite complementizer, *wer-* selects a finite VP, even in last resort cases, such as VP-topicalization in (17), whereas German *tun* selects a non-finite VP.

(16) Karrharde North Frisian

a. Tėth-üttīnen wer-t er kan-d.
Teeth-pulling wer-PRS.3SG he know-PRS.3SG
'He knows how to pull teeth.' (Hoekstra 2016: 322)

b. Wat wer-e jem der apfask-e?
what WER-PRS.2PL you there up.fish-PRS.2PL
'What are you fishing up there?' (Hoekstra 2016: 323)

c. Denn wer-e man eg aw't Håd fāl-e.
then WER-IMP.PL only not on=the head fall-IMP.PL
'Then don't fall on your head.' (Hoekstra 2016: 325)

(17) Karrharde North Frisian

He es fallight ferkimen, an lait je sagt wer
he is maybe, come down and lays really perhaps somewhere
krōnk, an $[_{VP}$ sturwe-d$]_1$ wer-t ham niman t_1.
ill and nurses-PRS.3SG WER-PRS.3SG him no one
'Maybe he has come down in the world and is perhaps ill in bed somewhere with nobody nursing him.' (Hoekstra 2016: 341)

17 Frisian is closely related to low German and Dutch. It is a V-final V2 language that is spoken in the coastal area of the German Bight.

Frisian *wer*-insertion therefore shows that the V2-position does not have to be filled with a genuinely verbal element. A suitable host for the inflectional affix appears to be sufficient. This fact agrees perfectly with the results of periphrastic *tun* and verb-doubling.

2.1.5 Complementizer agreement

A similar configuration, the so-called *complementizer agreement*, can be observed in embedded clauses of German and Dutch dialects.[18] As with Frisian *wer*-insertion, the inflectional affix appears at the clause-final verb and on C-elements, i. e. complementizers and *wh*-pronouns as illustrated in (18). The paradigm is often defective and is realized only for selected number/person combinations, such as 2nd sg/pl in Bavarian but see West Flemish as described by Haegeman (1992). Crucially in the respective dialects, complementizer agreement is obligatory and incompatible with verb movement. These two properties indicate that verb movement and complementizer inflection are driven by the same feature. Only one operation can satisfy this feature. Hence the exclusivity is readily explained.

(18) Bavarian

a. I frog' me, ob-st ned du des mocha kan-st.
I ask myself, whether-2SG not you this make could-2SG
'I ask myself, whether you could not do this.' (Weiss 2005: 148)

b. Du sollst song an wäichan Schua dass-st du wui-st
you should say a which one shoe that-2SG you want-2SG
'You should say which one of the shoes you want.' (Bayer 1984: 235)

c. Du sollst song wann-st du kumm-st
you should say when-2SG you come-2SG
'You should say when you are going to come.'

18 The reasons for the emergence of this phenomenon in the languages at hand are rather clear. V2 seems to be a necessary albeit not a sufficient condition. Cliticization to C was reanalyzed as inflection (see Bayer 2014: 41–44). Of all known V2 languages only German and Dutch seem to show complementizer agreement. It must be noted, however, that some North Italian dialects, such as Cimbrian, show subject clitics at complementizers that introduce non-V2 clauses whereas enclisis is blocked in subordinate clauses with V2-order (Bidese et al. 2012, 2013). Superficially similar phenomena in non-V2 languages differ considerably. Complementizer agreement in Nadji Arabic, as discussed in Lewis Jr. (2013), occurs only on specific lexical items, is optional, and uses non-verbal agreement morphemes.

Like Frisian *wer*-insertion, complementizer agreement indicates that inflectional affixes don't need to attach to a verb in the left periphery. They may well attach to other hosts in the C-domain, such as complementizers. In this way, the feature in C can be satisfied without moving the verb.

2.2 The base position: Arguments for reconstruction

2.2.1 Association with focus and markedness

Association with a focus particle such as *nur* 'only' is in German such that in the standard cases the focusing particle precedes and c-commands the associated focus. Consider first the case in which *nur* occupies a pre-*v*P scope position and associates with a focus constituent in the *v*P (signalled here with capitals).

(19) a. ... dass er nur [mit CLARISSA getanzt hat]
that he only with Clarissa danced has
'... that he danced only with Clarissa'

b. ... dass er nur [mit Clarissa GETANZT hat]
that he only with Clarissa danced has
'... that he only danced with Clarissa'

While (19b) may not be perfect for everybody, it improves when the non-focused PP is scrambled out of the *v*P as in (20).

(20) dass er [mit Clarissa] nur [~~mit Clarissa~~ GETANZT hat]
that he with Clarissa only danced has
'that he only danced with Clarissa'

The focus particle can also be merged with the focus constituent directly as one can see in those cases in which a constituent occupies Spec-CP, the German *Vorfeld*.

(21) a. [Nur mit CLARISSA] hat er getanzt.
'He danced only with Clarissa'

b. [Nur GETANZT] hat er mit Clarissa.
'He only danced with Clarissa'

Given that German is V2 and not V3, V4 etc., the strings in square brackets must be a single constituent.[19] The important point is that in all of the standard cases the particle precedes the focus. Notice now that German has the marked option (indicated by ^{M}) of moving the focus constituent to the left of the particle, as seen in (22).

(22) a. ^{M}[Mit CLARISSA] hat er nur [~~mit CLARISSA~~] getanzt.
'He danced only with Clarissa'

b. ^{M}GETANZT hat er [mit Clarissa] nur [~~mit Clarissa~~ ~~GETANZT~~ hat].
'He only danced with Clarissa'

In these examples, *nur* can only associate with the focused constituent if this constituent is reconstructed into its base position. Constituents in Spec-CP with inverted order appear to be equally marked and may for certain speaker even be ungrammatical.

(23) a. ^{M}[Mit CLARISSA nur ~~mit CLARISSA~~] hat er getanzt.
'He danced only with Clarissa'

b. ^{M}[GETANZT nur ~~GETANZT~~] hat er mit Clarissa.
'He only danced with Clarissa'

Consider now a case in which the associated focus is identical with the finite verb. As long as the verb stays in its clause-final position the particle precedes it.

(24) dass er [mit Clarissa] nur [~~mit Clarissa~~ TANZTE]
'that he only DANCED with Clarissa (he didn't KISS her)'

Interestingly, the focused verb can undergo V2 without giving rise to the markedness seen in (22) and (23). This is shown in (25).

(25) a. Er TANZTE mit Clarissa nur ~~TANZTE~~.
'He only DANCED with Clarissa (he didn't KISS her).'

How is this possible? It is possible if we assume that the focused finite verb is in V2-position solely for the reason of morphological integrity while it remains as a

19 This has been challenged, but we think for no good reasons; see the discussion in Bayer (2018) and in the literature cited there.

lexical item together with its focus in clause-final position. The part of the representation which is relevant for core syntax and semantic interpretation is thus as in (26).

(26) Er -te mit Clarissa nur TANZ~~te~~.
he 3SG with Clarissa only dance

2.2.2 Negative polarity

The German verb *brauchen* 'to need', 'to be obliged to' is a negative polarity item (NPI), on a par with other NPI such as *jemals* 'ever', uberhaupt 'at all', *auch nur ein bisschen* 'even a little' etc. *Brauchen* is a modal verb corresponding to *müssen* 'must', the difference being that the lexical option *brauchen* can arise only in the scope of a downward entailing operator. Consider first examples with adverbial NPIs:

(27) a. Niemand/ *Johann hat den Kranken jemals besucht.
nobody Johann has the patient ever.NPI visited
'Nobody ever visited the patient.'/'*Johann ever visited the patient.'

b. Nur die wenigsten/ *die meisten haben überhaupt zugehört.
only the fewest the most have at all.NPI listened
'Only the fewest people listened at all.'/'*Most of the people listened at all.'

c. Keiner/ *jeder hat auch nur ein bisschen aufgepasst.
no one everyone has also only a little.NPI attended
'Nobody payed even a little attention.'/'*Everybody payed even a little attention.'

In each of these cases, the NPI is in the scope of a downward entailing operator. Although adverbs can move to Spec-CP, NPIs generally cannot do so as the deviant examples in (28) show.[20]

20 See Meinunger (2004: 54) according to who "NPI licensing is known to be a very strong S-structure phenomenon". This is also true for English *any*.

(i) *I couldn't find anyone*.
(ii) * *Anyone couldn't be found ~~anyone~~*.

The only possibility would be to have the NPI in a larger phrase which undergoes reconstruction into a position in the scope of negation as seen in (iii).

(iii) *[A person [who knows anything about cholera]] could not be found [~~a person who knows anything about cholera~~]*.

This constellation is, however, not relevant to what follows.

(28) a. * Jemals hat niemand den Kranken ~~jemals~~ besucht.
ever.NPI has nobody the patient visited.

b. * Überhaupt haben nur die wenigsten ~~überhaupt~~ zugehört.[21]
at all.NPI have only the fewest listened

c. * [Auch nur ein bisschen] hat keiner ~~auch nur ein bisschen~~
also only a little.NPI has no one
aufgepasst.
attended

Returning to *brauchen*, notice now that this NPI's behavior would be a surprising exception to the otherwise valid requirement that the NPI must be in the scope of a downward entailing operator. Next to the expected case in (29a) we find that the V2-case in (29b) is likewise fully grammatical.

(29) a. ... dass er sich nicht zu fürchten braucht
that he REFL not to be afraid needs.NPI
'... that he doesn't need to be afraid'

b. Er braucht sich nicht zu fürchten ~~braucht~~.
he needs.NPI REFL not to be afraid
'He doesn't need to be afraid.'

In (29b), *brauchen* precedes and c-commands the negator *nicht* and thus appears to be outside its scope, exactly the reverse of the constellation that is normally found in NPI-licensing. This paradoxical situation is resolved if we assume that the verb has been moved to second position (C) for the sole reason of making its finiteness feature available in this position. The lexical part of the verb stays put. If so, (30) is the core-syntactic version of (29b).

(30) * Er –t sich nicht zu fürchten brauch-~~t~~
he 3SG REFL not to be afraid need.NPI

The spell-out of *brauchen* in the C-position is in the service of the PF-interface. This result echoes exactly the message that we could derive in the previous two sections. We will return to the syntax of *brauchen* in Section 3.2 where we will follow its role in on-line sentence comprehension.

21 There is another reading in which überhaupt is a clause linker in the sense of 'by the way'. (28b) is grammatical with this interpretation which is, however, irrelevant for the NPI-interpretation.

2.2.3 Sentential negation

Negation allows us to construct an even more general argument: As we will show, only obligatory reconstruction of the finite verb explains how sentential negation in V2-clauses with a single verbal element can be derived. Negation may vary in its scope domain, as roughly indicated by the brackets in (31). Only the negation in (31a) can receive wide scope as sentential negation with the effect of reversing the truth value of the respective affirmative sentence. The negation in (31b) takes only narrow scope (constituent negation) and excludes the respective constituent from the otherwise positive statement.

(31) a. [Letztlich hat Johann seinen Bruder *nicht* besucht].
finally has Johann his brother not visited
'Finally Johann didn't visit his brother. (But he will go for breakfast with his aunt today.)'

b. Letztlich hat Johann [*nicht* seinen Bruder] besucht.
finally has Johann not his brother visited
'Finally Johann visited not his brother (but his girl friend).'

From a semantic perspective, it is somewhat surprising that sentence negation is not realized by an initial negation that takes surface scope over the entire clause structure, as noted by Zeijlstra (2007). In the German examples in (31) it even seems that the sentential negation occurs very low in the structure. How can this be explained? The expression of negation in natural languages shows considerable typological variation (Zanuttini 2001, Miestamo 2007) but one generalization seems to hold: sentential negation must c-command the highest verbal element of the clause.[22] Haider (2012: 138–139) states that negation (and high adverbials) must c-command the element that situates the event variable in order to receive wide scope. This element is the finite verb in finite clauses and the highest non-finite verb in non-finite clauses. Accordingly, the negation in (31a) must have scope over the finite auxiliary *hat* or the whole verbal complex *besucht hat* respectively. This becomes even more evident in (32). Here the sentence contains only one verbal element. This verb must be finite and therefore moves to the V2-position. Hence it left the c-command domain of the negation. The structure in (32), however, is still interpreted as sentence negation. Under the assumption

22 In verb-initial languages, the negation therefore occurs in pre-VP positions, whereas in verb-final languages negation either occurs as a preverbal particle (German) or as postverbal particle or an affix (Korean, Turkish) (Zanuttini 2001, Miestamo 2007).

that the finite verb is reconstructed and interpreted in its base position, this fact is readily explained. In its base position, the verb *besuchte* in (32) is in the scope of the negation. Note that this mechanism was crucial to explain the licensing of the NPI-verb *brauchen* in the previous section.

(32) Letztlich besuchte Johann seinen Bruder nicht ~~besuchte~~.
finally visited Johann his brother not
'Finally Johann didn't visited his brother.'

Note further, that covertly raising sentential negation to a higher position in which it scopes over the V2-verb as in (32) is not a valid option. Such raising would predict that under sentential negation all NPIs that occur in a position lower than the V2-position should be licensed, contrary to the fact. (33a) shows that the NPI *jemals* 'ever' is ungrammatical in a position lower than the V2-position but higher than the sentential negation. In contrast, (33b) shows that *jemals* can be licensed in this very position by a licenser that scopes over the V2-position, here the negative phrase *auf keinen Fall* 'in no way' in Spec-CP.

(33) a. Letztlich besuchte Johann (*jemals) seinen Bruder nicht ~~besuchte~~.
finally visited Johann ever.NPI his brother not

b. Auf keinen Fall besuchte Johann jemals seinen Bruder ~~besuchte~~.
at no case visited Johann ever.NPI his brother
'In no way did Johann ever visit his brother.'

Since the negation does not raise, the only explanation for sentential negation in sentences like (32) is that the lexical verb reconstructs into its base position where it is within the scope of the negator, as illustrated in (34).

(34) Letztlich -te Johann seinen Bruder nicht besuch-~~te~~.
finally 3SG Johann his brother not visit
'Finally Johann didn't visit his brother.'

2.3 Summary

This concludes our considerations of V2 from a grammar-internal point of view. Our claim is rather strong. In support of our conjecture about V2 in (4), it says that the verb in C-position reconstructs into its base position without any exception. Dummy insertion does not fall under the generalization because the dummy verb was

never in the base position. The question is to what extent this could have any significance outside the realm of the abstract system of grammar. Therefore, we will in the following explore whether the insights so far have any bearing on language use. In Section 3.1, we will first take a look at existing studies. In Section 3.2, a novel experimental investigation of processing V2-clauses will follow. In Section 4, we conclude with some general considerations of the parsing process as it can be conceived from the side of language comprehension.

3 Experimental investigation of V2-movement

The V2-phenomenon is so far only poorly studied in the area of sentence processing. Most studies that involve a contrast between V2 and V-in-base order employ this contrast only to investigate some other phenomena and do not focus on the influence that the early availability of verbal information has.

3.1 Previous research on German sentence processing

Research about German sentence processing has extensively investigated the effect of argument order. In embedded clauses, all nominal arguments precede the verb, while the situation is more complex in V2-clauses. German allows basically two mechanisms[23] to derive non-canonical argument ordering, XP-fronting (topicalization) and scrambling, both of which yield different effects. Additionally, arguments are unambiguously case marked, or ambiguously, depending mostly on gender and the argument's categorial status (full DP, pronoun, bare NP). Generally it has been attested that German shows a robust preference for canonical argument ordering, i. e. nominative (subject) > dative (indirect object) > accusative (direct object). Deviations from these linearizations result in correlates of increased processing load. In case of scrambling, these effects manifest themselves in immediate responses such as longer reading times, and in ERPs as a fronto-central negativity on the misplaced element followed by a posterior positivity, which is interpreted as an increased memory load for storage of the argument for later integration followed by thematic reanalysis (Rösler et al. 1998, Bornkessel et al. 2002, 2003, Schlesewsky et al. 2003, Bornkessel & Schlesewsky 2006). Topicalization of a non-canonical argument (non-nominative), on the other hand, leads to a long lasting increase in processing load that spans from the displaced

23 We will ignore extraposition here.

element until its supposed gap site (base position). The consequences are longer reading times (Bayer & Marslen-Wilson 1992, Hemforth 1993: 157–170, Konieczny 1996, Fanselow et al. 1999, Weskott 2003), and left anterior negativity (LAN) (Matzke et al. 2002, Felser et al. 2003). If the initial argument is case ambiguous, it is automatically interpreted as the nominative argument (subject-first preference). Similar effects of argument reordering, as indicated by the above mentioned correlates of increased processing load, emerge at the disambiguating element.

3.1.1 Thematic processing

Against this background, we can evaluate some studies that contrasted the verb position (V2 vs. V-final) to inspect the effect of processing the arguments in conjunction with early availability of verb information. The general logic is simple: The specifics of arguments (number, case, semantic properties, primarily animacy) in a clause are dependent on the predicate. Some predicates may select non-canonical argument configurations. If the (lexical) verb appears in clause-final position, processing of the arguments applies according to the default processing routine. If the verb, however, appears very early, such as in V2-position, the processing load of the exceptional argument configuration should be reduced.

A productive type for such exceptional argument configurations are experiencer object verbs which are known to exhibit an *experiencer-first* preference, see (35a), instead of a subject-first preference (Verhoeven 2015, Temme & Verhoeven 2016), as in (35b).

(35) a. [Dem Jungen]$_{dat}$ hat [der Film]$_{nom}$ gefallen.
b. [Der Film]$_{nom}$ hat [dem Jungen]$_{dat}$ gefallen.
'The boy liked the movie.'

Building on this observation, Schlesewsky & Bornkessel (2004) report ERP results that contrast the processing of experiencer object verbs, as in (35) with agentive verbs, such as *folgen* "follow", that both select a nominative and a dative argument. They found that in clause-final position experiencer object verbs elicit an increased processing load (early parietal positivity) which they interpret as a revision process due to the exceptional thematic hierarchy of experiencer object verbs. Crucially, if those verb types are contrasted in V2-position no difference between the verb types can be detected (Bornkessel 2002). Additionally, the ERP-correlates on the arguments (in either order) are identical despite slight topological variation. With case ambiguous initial arguments, both verb types show the same N400 response at the disambiguating noun phrase that is characteristic for the detection

of a non-nominative (subject) initial configuration. Only after disambiguation (at the second argument), the agentive verbs showed a weak P600 that is indicative of reanalysis in the object-before-subject cases. "Therefore, the mechanisms responsible for the establishment of thematic relations between arguments also appear to operate without drawing upon verb-specific information, even when this information is available" (Schlesewsky & Bornkessel 2004: 1227). The three main results follow closely the prediction of our conjecture about V2: First, no difference of the verb types in V2-position but in V-final position. Second, no difference during argument processing. Third, with lexical verbs in V2-position no difference appears until the processing of the last argument, i. e. the position adjacent to the base position of the verb.

Similar results have been reported by Scheepers et al. (2000). In an eye tracking study, the authors contrasted experiencer object verbs, such as *ängstigen* 'frighten' with experiencer subject verbs, such as *fürchten* 'fear'. The initial argument DP in their material was always case-ambiguous, as shown in (36) below. The rationale is the same as above: Without initial verb information (V-final), object-initial clauses should cause an increase in processing load, whereas an object experiencer verb in V2-position should significantly diminish the penalty for object-initial sentences. However, Scheepers et al. (2000) report that the interaction of argument order and verb type is detectable at the same temporal locus in both sentence types. In verb-final clauses, this interaction shows up at the clause-final verb. In V2-clauses the effect appears directly after the second argument, on the adverbial *ein wenig*, i. e. the base position of the finite verb. We interpret these results as follows: verb-related argument processing surfaces as soon as the verb is lexically interpreted. In V-final clauses this cannot be done until the clause-final position has been reached. In V2-clauses this correlates to the base position of the verb, i. e. the post-argument position.

(36) a. V-final–Subject<Object vs. Object<Subject
Dass die strenge Lehrerin der stille Schüler/
that [the strict teacher]$_{nom/acc}$ [the quiet pupil]$_{nom/}$
den stillen Schüler ein wenig ängstigte/ fürchtete, ...
[the quiet pupil]$_{acc}$ a bit frightened/ feared

b. V2–Subject<Object vs. Object<Subject
Offenbar ängstigte/ fürchtete die strenge Lehrerin
obviously frightened/ feared [the strict teacher]$_{nom/acc}$
der stille Schüler/ den stillen Schüler ein wenig, ...
[the quiet pupil]$_{nom/}$ [the quiet pupil]$_{acc}$ a bit
'Obviously the strict teacher frightened/feared the quiet pupil a bit, ...' or
'Obviously the quiet pupil frightened/feared the strict teacher a bit, ...'
(Scheepers et al. 2000: 115–117)

In sum the experimental results on thematic processing converge into the following generalization: Verb types that differ in their arguments' configuration show measurable processing differences if they appear in their clause-final base position (post-argumental). In V2-position, no processing differences can be detected between verbs that select canonical order and those that select non-canonical orders. Moreover the processing of arguments shows the default processing pattern independent of the verb's position. Verb specific interactions appear in V2-clauses only at the final argument or shortly thereafter. In V-final clauses, these interactions appear on the clause-final verb. The observations match the conjecture about V2: In V2-position, the verb is largely ignored, processing proceeds as in V-final clauses until the reconstruction site is reached.

3.1.2 Scope computing

Bott & Schlotterbeck (2015) present two studies (self-paced reading and eye tracking) investigating the scope computation of two quantifiers that appear in non-canonical order, i. e. in object<subject order. In (37a), the object *jeden seiner Schüler* must be bound by the subject *genau ein Lehrer*. Therefore, it must be interpreted in the scope of the subject quantifier, i. e. establish a scope relation that is inverse to the surface order. The structure in (37b) on the other hand can be interpreted with surface scope order. Bott & Schlotterbeck (2015) report that in V-final clauses, as in (37c), the increased processing load due to doubly quantified sentences does not turn up until the occurrence of the clause-final verb, which indicates that scope computing depends on the lexical meaning of the predicate. In the V2-clause, however, the inverse scope effect emerges already at the first spillover element *voller* whereas the strong increase in reading times for doubly quantified sentences turns up at the second spillover element *Wohlwollen*.

(37) a. Jeden seiner Schüler lobte genau ein Lehrer
[Each.Q of his pupils]$_{acc}$ praised [exactly.Q one teacher]$_{nom}$
voller Wohlwollen.
full of goodwill.

b. Jeden dieser Schüler lobte der neue Lehrer
[Each.Q of these pupils]$_{acc}$ praised [the.DEF new teacher]$_{nom}$
voller Wohlwollen
full of goodwill

c. V-final scheme
Jeden seiner/dieser Schüler hat genau ein/ der neue
[Each of his/these pupils]$_{acc}$ has [exactly one/ the new
Lehrer voller Wohlwollen gelobt.
teacher]$_{nom}$ full of goodwill praised.
'Exactly one/The new teacher praised each of his/these his pupils full of goodwill.' (Bott & Schlotterbeck 2015: 64–65)

In sum, we observe the same patterns as in the thematic processing paradigm above. Processing effects that rely on the lexical meaning of the verb are delayed until the clause-final position in V-final clauses has been reached. In V2-clauses on the other hand, these effects are only delayed until the post-argument area, where the parser postulates the base position of the finite verb and reconstructs it.

3.1.3 Immediate verb related effects

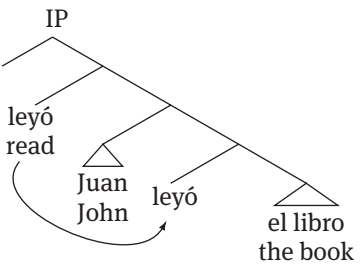
To our knowledge, the only experiment that claims to present evidence for immediate interpretation of the V2-verb is Weyerts et al. (2002). These authors claim that clause-final verbs are harder to process than verbs in V2-position. We consider that the results do not lead to the conclusions that the authors suggest, as thoroughly outlined in the critic by Schlesewsky et al. (2002). Furthermore, the claim that clause-final verbs are generally harder to process is at best an oversimplification. Specifically for German it has been argued that the processing load of the clause-final verb varies as a function of preverbal material. Konieczny (2000) reports results from a self-paced reading study that became known as the *anti-locality effect* or *anticipation hypothesis*. In German verb-final clauses, reading times on the verb turned out to be shorter with more preverbal material. Konieczny (2000) takes this as an indication of a type reduction operation: The more elements precede the clause-final verb, the faster it will be processed. This effect is more pronounced for predictable elements such as arguments but is also detectable for adjuncts (Konieczny 2000, Konieczny & Döring 2003, Levy & Keller 2013).

Should we conclude that verbs in second position exhibit longer reading times than their clause-final correspondents, because they cannot be anticipated? On the contrary. Scheepers (1997) reports that verbs in V2-position are read faster than their corresponding counterparts in clause-final position. He attributes this to an opaque clause-final wrap-up process. Although we do not deny that clause-final wrap-up may add to this, we suggest a more structured explanation: Under the assumption that the verb in V2-position is not fully interpreted it seems plausible that the processing time at this early point is rather short. A clause-final

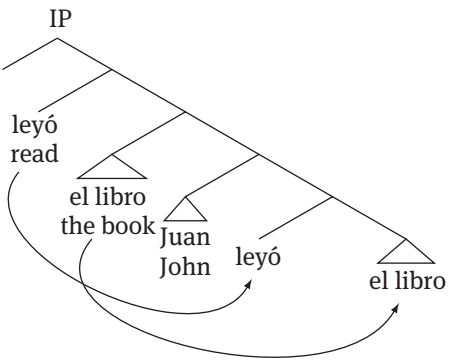
verb, on the other hand, can immediately integrate all its arguments and modifiers and be immediately interpreted. Therefore processing of clause-final verbs is predicted to evoke longer processing time.

Additionally, there is direct evidence for the fundamental assumption that verbal heads reconstruct in a filler-gap-like fashion. Love & Swinney (1998) cite a cross-modal lexical priming study by Basilico et al. (1995)[24] that investigated reactivation priming effects for verbs in Spanish verb-initial structures, VSO and VOS. The rationale goes as follows: Spanish has a basic SVO structure. Both verb-initial orders are derived by fronting underlyingly post-subject material (verb and optionally object), as shown in (38). Under the assumption that displaced verbs reconstruct into their base position we expect that the verb is reconstructed into a position between the subject and object in the VSO structure in (38a). In the VOS structure (38b), on the other hand, we expect that verb and object are reconstructed into the final position, after the subject, either individually or together as VP.

(38) a. VSO



b. VOS



(39) a. VSO

Vieron$_1$ [tus vecinos, los de la casa rosa] ## t_1 [a todos sus hijos, hijas y nietos] [el fin de semana pasado]?
see your neighbors them from the house pink to all their sons daughters and grand children the end of week past
'Did your neighbors from the pink house see all their sons daughters and grand children last weekend?'

24 Many thanks to Inés Antón-Méndez for rummaging up the paper and sharing it with us.

b. VOS
El fin de semana pasado vieron$_1$ a todos sus hijos,
[the end of week past] see [to all their sons
hijas y nietos
daughters and grand children]
tus vecinos, los de la casa rosa t_1?
[your neighbors them from the house pink]
'Last weekend see all their sons daughters and grand children your neighbors from the pink house.'

The prime position is indicated by ##. A related prime was *mirar* 'look'; an unrelated prime was *lavar* 'wash'. Basilico et al. (1995) report trace reactivation effects of the verb between the subject and the object position (##) in VSO clauses in (39a). This effect was absent between the object and the subject in the VOS structures in (39b), which ensures that the effect of the VSO structure is not based on linear distance but on the structural position. These results therefore provide positive evidence that also verbs, i. e. syntactic heads, may enter filler-gap dependencies in a similar way as it is widely accepted for dislocated phrasal constituents, and that priming detects the verb's underlying position.

While lexical information does not seem to be interpreted immediately, the finiteness information is. Schlesewsky et al. (2000) and Meng & Bader (2000) report that a verb that immediately follows a case ambiguous *wh*-element which involves a number mismatch, as in (40a), results in longer reading times on the verb and subsequent segments.

(40) a. Welche Frauen sah der Mann am Freitag?
[which women].PL saw.SG [the man]$_{nom}$ on Friday
'Which women did the man see on Friday?'

b. Welche Frauen sahen den Mann am Freitag?
[which women].PL saw.PL [the man]$_{acc}$ on Friday
'Which women saw the man on Friday?'

(Schlesewsky et al. 2000: 77)

Crucially the effect emerges before the disambiguating second noun phrase has been encountered. This indicates that the first noun phrase is immediately integrated as the clausal subject, and the verb is immediately integrated as head of the VP (see also Bader & Bayer 2006: 93–94).[25]

25 Notice that *welche Frauen* could be either nominative or accusative; in (40a), the choice of nominative is excluded by the failure of number agreement with the verb.

This immediate response to agreement errors, however, leaves open whether the processor only validates morphosyntactic phenomena or also initiates a full interpretation process once the verb is lowered. There is evidence for the latter, namely that the processor starts an integration, linking and interpretation process immediately after inserting a phrase into the current phrase structure. Results from immediate interpretation processes have been detected by Friederici & Frisch (2000). They investigated three types of violation in V2-clauses and V-final clauses, as illustrated in (41).

(41) a. well-formed
Heute ⟨besuchte⟩ der Cousin den Geiger
today visited [the cousin]$_{nom}$ [the violinist]$_{acc}$
im Krankenhaus ⟨besuchte⟩.
[in the hospital] visited
'Today, the cousin visited the violinist in the hospital.'

b. semantic violation
*Heute ⟨beizte⟩ der Cousin den Geiger am Mittag ⟨beizte⟩.
today stained [the Cousin]$_{nom}$ [the violinist]$_{acc}$ at noon stained

c. number of argument violation
*Heute ⟨trödelte⟩ der Cousin den Geiger am Aufzug
today dawdled [the cousin]$_{nom}$ [the violinist]$_{acc}$ [at the lift]
⟨trödelte⟩.
dawdled

d. type of argument violation (case marking)
*Heute ⟨besuchte⟩ der Cousin dem Geiger
today visited [the Cousin]$_{nom}$ [the violinist]$_{dat}$
im Krankenhaus ⟨besuchte⟩.
[in the hospital] visited

(Friederici & Frisch 2000: 481, 490)

In verb-final clauses, the responses to the violations in (41) were detected at the clause-final verb, consisting of an early negativity (N400/left lateralized negativity) and a later positivity (P600). The negative components are interpreted as semantic or syntactic violations followed by a repair process, which is indicated by the positive component. In V2-clauses, however, the components that emerged immediately at the second NP, showed more violation-specific variation. The semantic violation in (41b) only evoked an N400, a typical response to semantic anomaly. We assume that the verb is reconstructed, the

syntactic structure is built, and the result is in conflict with semantic normality. According to our theory, the conflict does not emanate from the prediction of the verb at the V2-poition but from the interpretation at the reconstruction site of the verb. The number-of-argument violation (41c) confronts the processor with a surplus argument for an intransitive verb. After syntactic integration of the surplus element, the interpretation procedure will result in a violation of the argument structure. This results in an N400, followed by structural reanalyses, as reflected by the P600 component. The type of argument violation in (41d) does not show an immediate negative component in the V2-clause because the clause is not necessarily ungrammatical at this point. There are grammatical continuations.[26] The P600 therefore might only reflect structural delay without semantic anomaly. While Friederici & Frisch (2000) assume that in V2-clauses the arguments are checked against the predictions of the verbs, we assume basically the opposite: In V2-clauses, the processor tries to complete the clause after every potential argument and pushes it to interpretation. In V-final clauses, the argument structure creates a prediction of the verb. Because the verb distinctively marks the end of the clause, the content will automatically be pushed to interpretation. There, all mismatches result in immediate negativities followed by positivities, which are taken to reflect repair mechanisms.

3.1.4 Intermediate summary

The review of the literature on German sentence processing processing has revealed that subject agreement is evaluated immediately at the V2-position. For processes that are dependent on the lexical semantics of the verb, mostly argument structure, the early availability of such information in the V2-position

26 These continuations include benefactive constructions as in (i) and dative possesive structures as in (ii) that are common in several German varieties.

(i) *Heute* *besuchte* *der Cousin* *dem Geiger* *zuliebe* *eine*
today visited [the Cousin]$_{nom}$ [[the violinist]$_{dat}$ for the sake] a
Freundin *im Krankenhaus.*
friend in the hospital
'Today visited the cousin a friend in the hospital for the sake of the violinist.'

(ii) *Heute* *besuchte* *der Cousin* *dem Geiger* *seine Frau* *im* *Krankenhaus.*
today visited [the Cousin]$_{nom}$ [[the violinist]$_{dat}$ his wife] in the hospital
'Today visited the cousin the violinist's wife in the hospital.'

does not seem to facilitate the processing of the arguments. More specifically, it seems that the arguments are processed with the same processing routines as in V-final clauses. Verb-related effects appear at roughly the clause-final position, i. e. the hypothesized base position of the finite verb.

3.2 Diagnosing verb reconstruction: A self-paced reading experiment

In order to diagnose reconstruction effects of the displaced finite verb into its base position, we build on the observation concerning the NPI-verb *brauchen*, discussed in Section 2.2.2.

3.2.1 Previous research on processing NPIs

Previous research on processing NPIs showed that participants are sensitive to specific licensing condition: Participants reject sentences that lack a licensor, as in (42b) and reject sentences in which the licensor is not in a c-command relation with the NPI, as in (42c).

(42) a. Kein Mann, der einen Bart hatte, war jemals glücklich.
no man who a beard had was ever.NPI happy
'No man who had a beard was ever happy.'

b. *Ein Mann, der einen Bart hatte, war jemals glücklich.
a man who a beard had was ever.NPI happy
'A man who had a beard was ever happy.'

c. *Ein Mann, der keinen Bart hatte, war jemals glücklich.
a man who no beard had was ever.NPI happy
'A man who had no beard was ever happy.'

(Drenhaus et al. 2005: 146)

In on-line processing, participants show immediate responses to licensing violations directly at the NPI (*jemals*). Violations yield prolonged reading times (RTs) for roughly three segments (Parker & Phillips 2016) or N400 effects (Saddy et al. 2004). However, illusory licensors, such as in (42c) lead to significant deviations: more errors and longer response latencies in speeded acceptability judgments (Drenhaus et al. 2005: 148–149), delayed effect of reading time increase

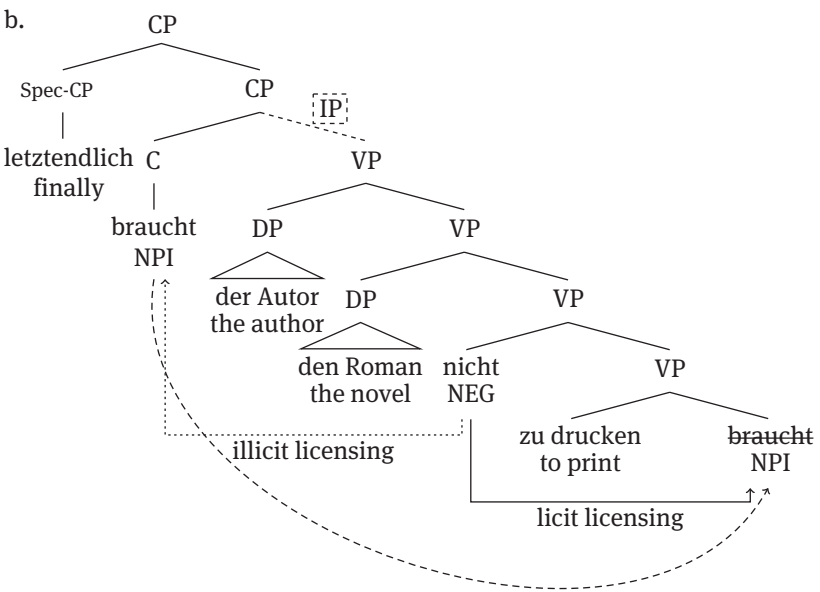
(Parker & Phillips 2016: 326–327), and a smaller N400 effect (Drenhaus et al. 2005: 155–157).

3.2.2 Rationale of the experiment

Recall at this point that in cases like (43a), the NPI can only be licensed in its base position and not in surface position, as illustrated in (43b). So in order to check the licensing requirements of *brauchen* (or other NPIs), these elements have to be reconstructed into the base position, as discussed in Section 2.2.2.

(43) a. Letztendlich *braucht* der Autor den Roman nicht zu drucken ~~braucht~~.
'Finally, the author doesn't have to print the novel.'

b.



In all cases with the V2-moved verbal NPI, the NPI precedes and c-commands its licensor. We predict where the V2-verb should be interpreted, namely in its base position. Nevertheless, no violation of NPI-licensing becomes apparent. It is the base position where we expect to observe the above mentioned effect of licensing failure, namely after the infinitive *zu drucken* 'to print'. We assume furthermore that the processor has a built-in preference to resolve such a pending dependency as early as possible. For filler-gap dependencies (especially *wh*-movement),

this has been thoroughly demonstrated and is widely accepted as the *active filler hypothesis* (see Frazier & Clifton 1989: 95). It builds on experimental evidence that indicates that the processor integrates the filler (displaced element) anticipatorily, before encountering explicit cues for the formation of the ultimate dependency. If the next incoming segment reveals that the position that was connected to the filler is filled by a surface element, a reanalysis process takes place. This results in an increased processing load known as the *filled gap effect* (Stowe 1986).

3.2.3 Procedure, materials, and predictions

Following this insight, we provided for more than one possible reconstruction site for the finite verb. We conducted a self-paced reading study, in which 41 students of the university of Konstanz (age 18–34 years, mean 23 year; 11 male) read the material word by word by means of pressing a button. The subjects saw only one word at a time (stationary window paradigm) and had no visual cues that would allow them to predict the length of the sentences. Our target sentences provided for two possible positions into which the NPI *brauchen* could reconstruct, as illustrated in (44).[27] Both positions, #1 in (44a) and #2 in (44b) are licit positions for the NPI because they are verbal positions that are locally c-commanded by the negator *nicht*.

(44) a. Letztendlich *braucht* der Autor den Roman *nicht* zu drucken #1 ~~braucht~~...

b. Letztendlich *braucht* der Autor den Roman zu drucken #1
finally needs the author the novel to print
unter Umständen *nicht*
eventually not
zu verbieten #2 ~~braucht~~ ...
to forbid

27 As pointed out by a reviewer, there are two potential reconstruction sites ahead, namely right after *Roman* and right after *nicht*. In these cases, which are not under investigation here, *brauchen* is the non-modal verb as in *I need an aspirin*. Strictly speaking, the verb should also reconstruct into these earlier sites. Searching for related effects would require a different experimental set-up though.

If participants insert *brauchen* automatically in #1, as expected under filler-gap parsing, the result is an ungrammatical structure.[28] The licensing conditions of the NPI are violated as seen in (45a) below. To measure such a potential effect we constructed control sentences, in which the NPI verb *brauchen* was replaced by *beschließen* 'to decide' because it appears in the same syntactic environment, selects a *zu*-infinitive and constitutes a plausible replacement in the relevant contexts. Crucially, however, *beschließen* is not an NPI and therefore yields a grammatical structure if it is inserted in #1, as illustrated by the contrast between (45a) and (45b). On the other hand, *beschließen* is fully compatible with negation. The difference between the two verbs can therefore be stated by the following rule: *brauchen* is ungrammatical in a position not in the scope of a negation whereas *beschließen* is grammatical whether in the scope of negation or not.

(45) a. * Letztendlich *braucht* der Autor den Roman zu drucken #1 ...
b. Letztendlich *beschließt* der Autor den Roman zu drucken #1 ...

The material consisted of 32 experimental items interspersed with 35 fillers (20 from a different experiment) resulting in 67 stimuli per participant. The target sentences were preceded by a context sentence, as in (46a). The items varied in a 2 × 2 × 2 design with the factors MATRIX.VERB, ILLUSORY.NEG, and LICENSING.NEG. The finite matrix verb was either the modal NPI verb *brauchen* 'have to', as in (46b) or the neutral verb *beschließen* 'decide', as in (46c). The factorial combination of the two negation positions result in four different negation patterns in (46b) and (46c): no negation, only early negation, only late negation, and double negation. Actually, only the second negation is relevant for the licensing of the NPI *brauchen* in the final structure, hence the term *licensing negation*. The first negation only appears to be related to the licensing of the NPI in the incomplete initial substring. In the final structure, however, the first negation is irrelevant for the licensing configuration because it does not c-command the V-head of the matrix clause VP, hence the term *illusory negation*.[29] Half of the items were followed by a comprehension question, as in (46d), to ensure that participants had actually read the sentences.

28 To be sure, there is no reason for the parser to hypothesize more than the minimally converging structure; this excludes the expectation of a converging structure that leads to the successful gap filling at #2.

29 This means that two of the eight experimental condition are finally ungrammatical which, however, does not affect measures at earlier points.

(46) a. An author has trouble with his publisher because of his new novel. He talks to his lawyer whether he should forbid the printing.

b. +NPI (±ILLUSORY.NEG) (±LICENSOR.NEG)
Letztendlich *braucht* der the Autor den Roman (*nicht*) zu drucken #1
finally NPI the author the novel not to print
unter Umständen
under circumstances
(*nicht*) zu verbieten #2, um das mediale Interesse zu wecken.
not to forbid for the medial interest to arouse
'Thus, the author does(n't) have to forbid to (not) print the novel this time in order to arouse the attention of the media.'

c. −NPI (±ILLUSORY.NEG) (±LICENSOR.NEG)
Letztendlich *beschließt* der Autor den Roman (*nicht*) zu drucken #1
finally decides the author the novel not to print
unter Umständen (*nicht*) zu verbieten #2, um das mediale
under circumstances not to forbid for the medial
Interesse zu wecken.
interest to arouse
'Thus, the author does(n't) decide to forbid to (not) print the novel this time in order to arouse the attention of the media.'

d. Hat der Autor mit seinem Anwalt gesprochen?
'Did the author talk to his lawyer'
Correct answer: Ja 'Yes' *wrong answer:* Nein 'No'

The predictions are the following: Reconstruction of the finite verb being an automatized process, the finite verb will always be reconstructed into the earliest syntactically possible position. Consequently, we predict longer reading times from #1 onwards, i. e. *drucken*, in the +NPI, −ILLUSORY.NEG-condition. We expect the same effect to appear at #2, i. e. *verbieten*, in the +NPI, −LICENSOR.NEG-condition.

3.2.4 Results and discussion

The results are presented in Figures 1 and 2.[30] In line with our prediction, the +NPI, −ILLUSORY.NEG-condition showed significantly prolonged reading times in comparison to the other conditions from the infinitive *drucken* onward, see

30 A detailed description of the results and the statistical analysis is given in Freitag (2019).

Figure 1. This indicates that the licensing conditions of the NPI-verb *brauchen* are evaluated at this position. The observed effects match the correlates, which have been reported for non-licensed NPIs in surface position.

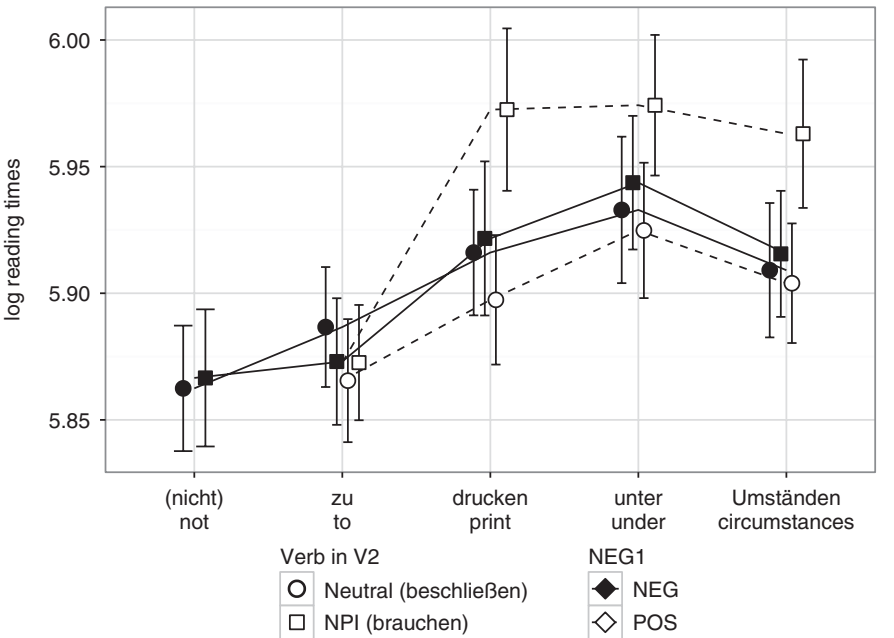


Figure 1: Mean reading times for the low VP + adverb region of experiment 1 (95% CI).

At the second region of interest the second infinitive *verbieten* – the results are less straightforward, see Figure 2. Although we could not detect any effect in the NPI-conditions, we found a simple complexity effect for the control verb with longer reading times for the condition with two occurrences of negation than for the non-negated condition. In the spillover region however, we found significantly longer reading times for the NPI with only the illusory negation (+NPI, +ILLUSORY.NEG, −LICENSOR.NEG) at the word *mediale*. We assume that this indicates a delayed effect of evaluating the licensing conditions. While the non-negated condition is clearly out, and the doubly negated condition, albeit very complex, is clearly grammatical, this condition is ungrammatical too although harder to diagnose. Interestingly, at the clause-final verb, we found a 3-way interaction that revealed shorter RTs for the control verb in the completely non-negative condition. This indicates that the processing load related to (double)-negation, ungrammaticality, or NPI-licensing continues until the end of the sentence.

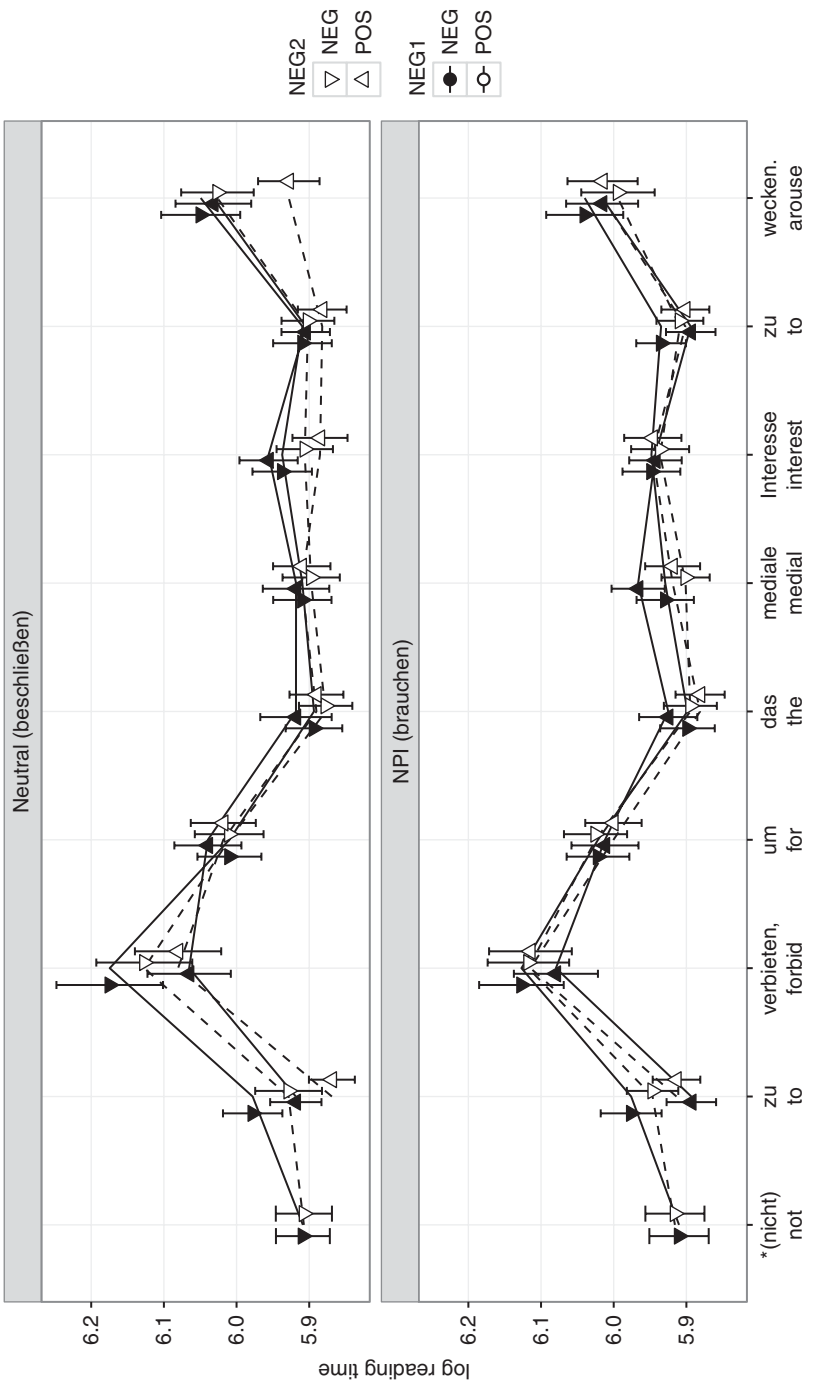


Figure 2: Mean reading times for the high VP + spillover region of experiment 1 (95% CI).

One weakness of the material is that in the first region, where we found the predicted effect, the distance between the position of the negation and the reconstruction site of the NPI is very small. An alternative explanation can therefore be that the prolonged reading times in the +NPI, −ILLUSORY.NEG-condition is a consequence of the missing negation. If the NPI is interpreted in the C-domain, a negation is expected. If this expectation is not satisfied, the reading times increase on the following elements. Clearly, a follow-up experiment needs to be performed in order to falsify the predictions of this hypothesis. However, we expect that this effect would emerge in the same way at the second VP region (*nicht zu verbieten*), contrary to the results. The fact that the effect in the second region is delayed and sensitive to the illusory negation renders it more plausible that the effect is tied to an interpretative mechanism of NPI-licensing rather than to a simple expectation of a negation. Moreover, an expectation-based approach is not able to explain the special status of the illusory licensing, which, however, has been reported in other experiments employing different experimental methods.

In sum, the result of the experiment closely match the predictions of the reconstruction hypothesis in the first region and are fully compatible with the predictions in the second region if we consider the increase in complexity at that point.

4 The dynamics of parsing with respect to the finite verb's reconstruction

According to the grammar, the C-position, which hosts the finite verb, is a functional position. We have amply demonstrated that the position in which the verb as a lexical item is interpreted is elsewhere, namely in the VP. If so, the verb in C is not or at least not fully semantically interpreted before it is lowered into the reconstruction site. One consequence of this is that the V2-position must under no circumstances be confused with the head of a head-initial VP. At the same time, we are familiar with and subscribe to the insight that the human parsing device exploits the input maximally in favor of the rapid establishment of a mental representation. How can this be harmonized with the verb's reconstruction into its base position and the apparent delay in full interpretation? It can if we allow ourselves to conceive of parsing as a dynamic process in which different and occasionally incongruous semantic representations may follow each other in a rapid sequence.

Let us adopt Kimball's (1973) principle of *Early Closure* (EC). EC determines that a phrase is closed as soon as possible, i. e., unless the next node parsed is

an immediate constituent of the phrase. EC is a principle of parsimony by making minimal assumptions about the upcoming input. The sentence will be closed as soon as it has reached minimal completeness under the control of the competence grammar. Assume the parser has received the three constituents *Johann*, *hat* and *ein Buch*. The parse proceeds as in (47). Given that the finite verb is in C and needs to be lowered into its base position, (47d) is a step that copies the finite verb into its base position. At this point, EC applies, and the proposition could in principle be shunted to the general cognitive system.

(47) a. Johann
b. Johann hat
c. Johann hat ein Buch
d. Johann ~~hat~~ ein Buch hat EC
e. Johann ~~hat~~ ein Buch hat verloren LC
f. Johann ~~hat~~ ein Buch ~~hat~~ verloren hat EC
Johann a book lost has

At this stage, the mental representation is roughly POSSESS (johann, book). However, EC must not be understood as stopping the integration of further material for good. If the parser receives the verbal form *verloren*, this form can be integrated in such a way that the VP [*ein Buch hat*] will be changed into [*ein Buch verloren hat*]. The principle by which the parse is extended is known as *Late Closure* (LC) (Frazier 1978). LC (a. k. a. *Recency*) demands that new material is integrated into the current node that is under construction and not elsewhere as it would, for example, be the case in the apposition construction *Johann hat ein Buch, ... verloren von Hedwig und wieder gefunden von seinem Freund Willi* ('Johann has/owns a book, lost by Hedwig and found again by his friend Willi'). How can LC integrate the non-finite verb *verloren* into (47d)? It can do so by attaching *verloren* to the VP [*ein Buch hat*] and lowering the finite verb *hat* one step down to the end of the newly created VP. Here, EC applies again, and the resulting sentence is again ready for being shunted out of the parser's work space.

At first sight, one may find such revision cumbersome, but closer inspection shows that the change is less dramatic than it seems. Bader & Bayer (2006: 2), following earlier work by Mitchell (1994) and Gorrell (1995), distinguish between processes of structure assembly and processes of linking (and checking, which does not play a role here). *Structure assembly* concerns the processes that compute phrase-structure trees. *Linking* concerns the processes that associate phrases within the phrase-structure tree with argument structure positions. In the transition from (47d) to (47f), the DP *ein Buch* has to be re-linked from the (main) verb *hat* to the verb *verlieren*. This is possible because *hat* disappears

from the structure by being lowered to the next potential reconstruction site of the finite verb. The object status of the DP does not change. We can, of course, not be sure what the human parser *actually* does within milliseconds, but assuming that (47d) has received a conclusive semantic interpretation, we see here a drastic semantic change toward a totally different proposition. FRITZ OWNS A BOOK ⇒ FRITZ LOST A BOOK. Although this semantic shift is remarkable, processing the sentence *Fritz hat ein Buch verloren* is far from giving rise to a conscious garden path. The reason is that there is no garden path involved.[31] In a garden path, normally, a constituent gets relocated into another phrase as, for example, in *When you [run a mile] … looks like nothing* ⇒ *When you [run] [a mile looks like nothing]*. Here *a mile* needs to be taken out of the current VP and inserted as the subject into a new sentence. Notice that in our example, the DP *ein Buch* is not taken out of its minimal VP; it is simply relinked within its VP after the latter has been enriched by the new predicate *verloren*, and the original verbal head, namely *hat*, has been lowered to clause-final position. If we are right, the prediction is that successive lowering of the finite verb in on-line comprehension may run through different semantic representations without giving rise to anything comparable with garden path effects. Given that German V2 (and V1) clauses are not in any sense harder to comprehend than V-final clauses, the almost inevitable conclusion must be that semantic "garden paths" must be rather harmless in comparison with genuine structure-based garden paths.

This does not mean that we want to downplay the effects of temporary semantic ambiguity. The following example is a real life spoken sentence from a radio program that was heard by the first author.

31 Wikipedia informs us that

> A garden path sentence is a grammatically correct sentence that starts in such a way that a reader's most likely interpretation will be incorrect; the reader is lured into a parse that turns out to be a dead end or yields a clearly unintended meaning. (Source: https:// en.wikipedia.org/wiki/Garden_path_sentence)

This definition is far too unrestricted. Next to cases of structural reassignment, it declares any sentence a *garden path* in which an expectation of the hearer has not been satisfied by the input. If the pronoun *he* in *John believes that he won* is preferredly interpreted as coreferential with John, the revelation that *he* actually refers to Bill would amount to a garden path. This is obviously wrong. A garden path in the narrow sense that we are using is a sentence in which some constituent X needs to be removed from its current structure Y and be re-inserted into a new structure Z; as a consequence, structure Y – the garden path – has to be abandoned. This is the case in, say, *John gave her earrings* if it is continued with the phrase *to Sue*. The dative of *her* has to be removed from the structure and reanalyzed as a possessive pronoun of the DP *her erarrings*. Restructuring in this sense is far more specific than general revision of *unintended meaning*.

(48) Der junge Mann trug ein grünes Kleid durch den Laden.
the young man carried a green dress through the shop
'The young man carried a green dress across the shop.'

This sentence gives rise to a strong effect of semantic revision because *tragen* can mean 'to wear'. After merger with the DP *ein grünes Kleid* and before the advent of further input, this interpretation is extremely strong. The hearer lands invariably at the proposition that the young man wore a green dress.[32] In spite of this, the "repair" that follows when more input enters the structure, lacks the garden path flavor entirely. The transition into the semantic representation corresponding to (48) is effortless. It is like seeing one picture and immediately after seeing another picture. The absence of a (structural) garden path effect is immediately explained in the present theory of V2 parsing by successive lowering of the finite verb. Consider how the parse develops over time.

(49) a. Der junge Mann
b. Der junge Mann trug
c. Der junge Mann ~~trug~~ ein grünes Kleid trug EC
d. Der junge Mann ~~trug~~ ein grünes Kleid trug durch den Laden LC
e. Der junge Mann ~~trug~~ ein grünes Kleid ~~trug~~ durch den Laden trug EC
the young man a green dress through the shop carried

At (49c), the interpretation is that the young man wore a green female dress. This meaning is abandoned without a garden path-like restructuring and is remodeled after attachment of the directional PP *durch den Laden* and further lowering of the verb *tragen*. After merger with this PP, the verb's meaning has changed from 'wear' to 'carry': The young man, whose outfit, of course, remains without any mention, carried a green female dress across the shop.

This example shows rather clearly what is going on during comprehension of a V2, clause: The finite verb is lowered into its closest base position, in agreement with minimal assumptions about the input. Upon further input, this can be performed recursively until no further input comes in and the end of the parse has been reached. Intermediate shifts in meaning are obviously computed but do not appear to hamper the parsing process in a serious way.

32 Since in German the noun *Kleid* is reserved for a female dress, the immediate reaction to the sentence is that this young man dressed like a woman.

5 Conclusions

The syntax and semantics of German gives quite a number of cues that the lexical part of the finite verb in V2- or V1-constructions is interpreted in its base position. This position is beyond any doubt the clause-final position. This means that German is in its underlying structure a genuine head-final language. Thus, German can in no way be confused with a language whose VP is headed by an initial head. Various tests reveal that the only way to arrive at proper generalizations about the competence grammar of the language requires the verb's reconstruction into the clause-final position.

While this view is shared by many linguists who work in generative grammar, it is not so obvious how the structural assumptions map onto processes of on-line comprehension that have been studied in theoretical and experimental psycholinguistics so far. According to the common sense view, every word is integrated and exhaustively interpreted at the very moment it is received. At first sight, this view seems to clash with the linguistic structure that assumes the finite verb to be reconstructed. However, we have presented experimental studies that do not support the fully incremental perspective but rather support our hypothesis that whenever the lexical verb meaning is needed, the processes are delayed until the reconstruction site in V2, clauses has been reached. In an experiment about the on-line reading of sentences with the NPI-verb *brauchen* in 2nd position, it could be shown that the human parser in fact does quite exactly what is expected from the view of the competence grammar: The verb *brauchen* is mentally lowered to the next possible landing site. If it can be lowered to a position that is locally c-commanded by negation (or some other relevant operator), the parse converges. If it is, however, lowered to a position that is not locally c-commanded by negation, the parse collapses. In the present experiment, this could be demonstrated with enhanced reading times.

Naturally various questions about V2 and V2-parsing remain. A very interesting topic is certainly the status of dummy insertion as, for instance, seen in *tun*- or verb-doubling constructions. Although our observations and intuitions seem to be on the right track, it remains open how these cases can be integrated into the theory of grammar. Likewise it remains to be seen how these structures are processed. Nevertheless the convergence of linguistic and experimental psycholinguistic research should be taken as an indication that our present understanding of the V2-phenomenon is on a promising track of theory-building.

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Ulrike Freywald

Notes on the left periphery of V2 complement clauses in German: Complementiser drop and complementiser doubling

Abstract: This contribution deals with verb second (V2) in subordinative contexts, in particular in complementiserless complement clauses. As V2 is considered as a main clause phenomenon in German (and several other Germanic languages) the question arises how much alike to main clauses such embedded V2 clauses actually are. Focussing on German, I will address the syntactic problem whether the domain in front of the finite verb (the "prefield") in V2 complement clauses exhibits the same properties and the same structural layout as in V2 main clauses. Evidently, the prefield of V2 complement clauses is restricted in certain ways, for dislocation processes to the left are very limited. This can be seen as indication of a structurally reduced left periphery comparable to the reduced size of subordinate clauses in general.

As a first step to address these issues I discuss a piece of indirect evidence in the present paper: complement clauses with a doubled, or resumptive, complementiser *dass* 'that' as in *er meint, dass, wenn er das erreicht, dass sich dann auch die Erfolge wieder einstellen* 'he thinks that if he manages this the successes will ensue again'. Since such clauses display a structurally richer left periphery than complement clauses with a single complementiser they shed light on the syntactic structure of the left edge of complement clauses in general and, by implication, on V2 complement clauses.

Relying on data from large written and spoken text corpora I argue that the doubling of complementisers involves recursion of FinP (containing the complementisers) together with the top-most topic position(s) of the middle-field. This analysis is supported by the fact that complementiser doubling is not always a repair strategy to solve processing difficulties. It typically involves a specific type of sandwiched material in-between the two complementisers, namely delimitative expressions, or more precisely: framesetting and contrastive topics. Hence,

Note: I thank the participants of several V2-workshops in Wuppertal as well as an anonymous reviewer for very helpful comments on the present paper.

Ulrike Freywald, Technische Universität Dortmund

https://doi.org/10.1515/9781501508141-004

the findings with respect to complementiser doubling support the analysis that subordinate clauses do not possess an articulated C-domain above FinP. Therefore, the assumption that V2 complement clauses have a reduced C-domain – just like any other subordinate clause – should be maintained.

1 Introduction: Verb second and subordination

In the verb final language German, verb second (V2) is regarded as a strict main clause phenomenon, i.e. as confined to root clauses (cf. (1b)). In contrast, the basic verb-final word order occurs only in subordinate clauses (cf. (1a)). This distribution results from the well-known fact that the finite verb, when fronted, targets the Comp position in V2 clauses (as well as in V1 clauses). Hence, a complementiser and a fronted finite verb do not occur together, cf. (1c):

(1) a. *Sie verschweigt ihm, **dass** sie kürzlich eine Suzuki erworben **hat**.*
she withholds him that she recently a Suzuki purchased has
'She withholds from him that she purchased a Suzuki motorbike recently.'

b. *Sie$_k$ **hat**$_j$ t$_k$ kürzlich eine Suzuki erworben* **t**$_j$.
'She purchased a Suzuki motorbike recently.'

c. **Sie verschweigt ihm, **dass** sie **hat**$_j$ kürzlich eine Suzuki erworben* **t**$_j$.

Other structural main clause phenomena cluster with V2: These include a number of fronting and dislocation processes such as V/VP fronting, fronting of a contrastive adverbial and left dislocation:

(2) a. VP fronting
[*Beim Schwarzfahren erwischen*] ***würden*** *sie dich nie!*
at.the fare-dodging catch would they you never
'They'd never catch you fare-dodging!'

b. Adverbial fronting
[*Gleich jetzt*] ***rufe*** *ich den Vermieter an.*
outright now call I the landlord at
'I call the landlord straight away.'

c. Left dislocation
[*Die Schauspielerin, die*] ***würde*** *ihm ein Autogramm geben.*
the actress she would him an autograph give
'The actress would give him an autograph.'

In German, these processes are possible in V2 clauses only, since only the position in front of the moved finite verb – the so-called "prefield" – may serve as a landing site for fronted and dislocated material.[1]

Despite its status as a main clause phenomenon, V2 may nonetheless occur in subordinate clauses under certain conditions, namely when the complementiser is dropped. Due to the complementary distribution of complementiser and finite verb movement, the verb is fronted if the complementiser is absent, cf. (3) (in (3b), the subject pronoun in the complement clause is bound by a quantifier in the matrix clause; this shows that the V2 clause is truly embedded):[2]

(3) a. *Jeder*$_i$ *möchte gern glauben,* ***dass*** *er*$_i$ *unheimlich beliebt* ***sei***.
Everyone wants happily believe that he terribly popular be
'Everyone would like to think that s/he is terribly popular.'

b. *Jeder*$_i$ *möchte gern glauben, er*$_i$ ***sei***$_j$ *unheimlich beliebt* $\mathbf{t}_j$. (Reis 1997: 139)

Complementiser drop is highly restricted in German: It is permitted only in complement clauses introduced by the complementisers *dass* 'that' or *wenn* 'when, if' (yielding V2, cf. (3), (4) and (5)) and in conditional (and rarely in adversative) clauses introduced by *wenn* 'when, if' (yielding V1, cf. (6)):[3]

(4) Complement of a noun
a. Verb second
Die Idee/Illusion/Hoffnung, er ***könne*** *damit reich werden,*
the idea/illusion/hope he could with.it rich become
beflügelt ihn.
spurs him
'The idea/illusion/hope that he could get rich with this spurs him.'
(Reis 1997: 140)

1 Note that these types of fronting and dislocation represent main clause phenomena in non-V2 languages, too, for example in English (cf., among others, Hooper & Thompson 1973, Green 1976, Heycock 2006).

2 V2 complement clauses possess all properties of dependent clauses; they not only allow variable binding but may also be multiply embedded, they may be fronted together with their matrix expression, and they may be interpreted within the scope of negation and illocutionary operators in the matrix clause (cf., among others, Reis 1997, Meinunger 2004, Holler 2008, Freywald 2013).

3 For verb first word order in conditional and adversative clauses cf., among others, Reis & Wöllstein (2010), Van den Nest (2010), Pittner (2011), and Christ (2014).

b. *dass* + verb final
Die Idee/Illusion/Hoffnung, ***dass*** *er damit reich werden* ***könne****, beflügelt ihn.*

(5) Complement of a matrix clause expressing a preference
a. Verb second
Am besten wäre es, Gaddafi ***bekäme*** *einen fairen Prozess*
at.the best was it G. got a fair trial
mit souveränen Richtern, die verhindern, dass er
with confident judges who prevent that he
im Gerichtssaal eine große Show abzieht.
in.the courtroom a big show performs
'It would be the best if Gaddafi got a fair trial at court with confident judges who prevent him from putting on a big show.'
("Süddeutsche Zeitung" [German newspaper], 09/09/2011)

b. *wenn/dass* + verb final
Am besten wäre es, ***wenn/dass*** *Gaddafi einen fairen Prozess mit souveränen Richtern* ***bekäme*** *…*

(6) Conditional adverbial clause
a. Verb first
Hätte *ich nicht seit meiner frühen Jugend Migräne gehabt,*
had I not since my early youth migraine had
wäre ich Musiker geworden.
was I musician become
'If I hadn't suffered from migraine since my early youth, I'd have become a musician.' (Zifonun et al. 1997: 2281)

b. *wenn* + verb final
Wenn *ich nicht seit meiner frühen Jugend Migräne gehabt* ***hätte****, wäre ich Musiker geworden.*

Furthermore, complementiserless complement clauses are subject to a number of semantic, syntactic and pragmatic restrictions. As pointed out in several studies, V2 complement clauses are limited to non-factive matrix predicates, and they convey a flavour of an assertional speech act (or: assertional proto-force in the sense of Gärtner 2002), which is why they come close to separate statements and, therefore, to main clauses (Reis 1997, Auer 1998, Meinunger 2004, Truckenbrodt 2006, Antomo & Steinbach 2010, Antomo 2015, Freywald 2013, 2018). This last point is not undisputed, however. The question whether V2

complement clauses are (always) asserted or whether other factors play a more crucial role with regard to V2, such as at-issueness, main point of utterance, anti-non-veridicality, etc., is still a matter of debate (cf. Antomo 2015, 2016, Jacobs 2018, this volume).

As to V2, a further question arises, namely whether the newly established prefield in V2 complement clauses exhibits the same properties and the same structural layout as the prefield in main clauses. This question is still largely unresolved. In this paper, I will report some first observations in order to shed light on the syntactic structure of the left periphery of dependent V2 clauses. In the present study, I will refer to a piece of indirect evidence: I am going to discuss *dass*-clauses with a second, resumptive complementiser, as illustrated in (7):

(7) *Und ich weiß,* ***dass*** *wenn ich eine E-Mail bekomme oder eine*
and I know that when I a email get or a
SMS ***dass*** *niemand mich zwingt, diese sofort abzurufen.*
text.message that nobody me forces this at.once to.check
'And I know that when I get an email or a text message nobody forces me to check it immediately.'
(DeReKo[4], SKU09/DEZ.06412, "Südkurier" [German newspaper], 12/12/2009)

As these clauses display a structurally richer left periphery than complement clauses with a single complementiser they may inform us about the structural layout of the left edge of complement clauses in general, and this may also lead to new insights into the nature of the prefield domain of V2 complement clauses.

The paper is structured as follows: In the next section, I report on observations with respect to restrictions on the prefield in V2 complement clauses, in particular on extensions to the left in terms of dislocation processes (Section 2). Then I discuss the distribution, functions and formal properties of complementiser doubling in German and propose a syntactic analysis. I present data from spoken and written corpora that show that complementiser doubling is a systematic, grammatical phenomenon (Section 3). Finally, I discuss implications for the modelling of the left periphery of V2 complement clauses (Section 4). I argue that the

4 DeReKo is the abbreviation of "Deutsches Referenzkorpus" (German Reference Corpus). It is an electronic, online searchable corpus of the size of 42 billion words, which consists mainly of newspaper texts of the entire German-speaking area; see also fn. 8.

results of the analysis of complementiser doubling confirm the initial claim that V2 complement clauses have a structurally reduced left periphery – as opposed to V2 main clauses.

2 Structural restrictions on the prefield in V2 complement clauses

In Freywald (2016, 2018) I discuss syntactic properties of the prefield in V2 complement clauses. As it turns out, the prefield seems to be much less flexible here than in independent V2 clauses. To test this, I chose syntactic contexts that ensure that the complement is truly embedded; these are: placement of the complement clause, first, within the scope of either an illocutionary operator as in (8a) or a correlate *es* 'it' as in (8b), and, second, variable binding in (8c).[5] The examples in (8) demonstrate that V2 complements do not permit the prefield-related structural main clause phenomena listed in (2) above:

(8) a. VP fronting
**Hattest du ernsthaft geglaubt,* [*beim Schwarzfahren*
had you seriously believed at.the fare-dodging
erwischen] ***würden*** *sie dich nie?*
catch would they you never
'Did you really believe they'd never catch you fare-dodging?'

b. Adverbial fronting
Es wär besser,* [*gleich jetzt*] ***rufe* *ich den Vermieter an.*
it were better outright now call I the landlord at
'It would be better if I called the landlord straight away.'

5 This is relevant because some matrix predicates that allow V2 complements occur also in the context of non-hypotactic clause combining. There, what looks like a matrix clause serves as a kind of framing element that does not dominate the following clause but leads over to a potentially independent utterance ("Doppelpunktlesart" in Reis 1997, "half-statement reading" in Truckenbrodt 2006; see also Imo 2007, Axel-Tober 2012, and Freywald 2016, 2018; for English cf., among many others, Thompson 2002, Aijmer 2007, Boye & Harder 2007, and van Bogaert 2011).

c. Left dislocation
Jeder$_i$ *hatte gehofft,* [*die Schauspielerin, die*] ***würde***
everybody had hoped the actress she would
ihm$_i$ *ein Autogramm geben.*
him a autograph give
'Everybody hoped that the actress would give him/her an autograph.'

From this we have to conclude that a number of syntactic processes which target the prefield in independent V2 clauses are not available in V2 complement clauses. In particular, syntactic topic-marking strategies are not applicable. In Freywald (2018), I put forward the conclusion that the C-domain of dependent clauses is generally reduced. In line with Grewendorf (2002, 2010, 2013), among others, I assume that the position of the complementiser in verb-final clauses and of the finite verb in V1/V2 clauses is the head of FinP within a split-C approach; it thus occurs at the bottom of the C-domain (which implies that German is a "low V2 language", cf. also Grewendorf & Poletto 2011). Levels that are designated for coding information-structural and discourse-related content, such as topic/focus status, illocutionary information, speaker-addressee relations, etc. – depending on the particular cartographic model –, are situated above FinP, though.

The difference between main and subordinate clauses is illustrated in (9): The main clause (MC) in (9a) contains a focussed DP, which is located within a fully articulated C-domain. In the subordinate clause (SC) in (9b), no positions above FinP are available:

(9) *(Was hast du gestern gekauft?)*
'What did you buy yesterday?'

a. [$_{\text{ForceP}}$ [$_{\text{TopP}}$ [$_{\text{FocP}}$ *Mehl*$_j$ [$_{\text{FinP}}$ t$_j$ *habe*$_i$ [$_{\text{TP}}$ *ich gestern* t$_j$
flour have I yesterday
gekauft t$_i$]]]]]. MC
bought
'Flour I bought yesterday.'

b. (*Ich glaube,*) [$_{\text{FinP}}$ *dass* [$_{\text{TP}}$ *ich gestern Mehl gekauft habe*]]. SC
I think that I yesterday flour bought have
'I think that I bought flour yesterday.'

The absence of structural main clause phenomena in the V2 complement clauses in (8) suggests that in these clauses, too, positions higher than FinP are not available or at least not accessible, as is the case in dependent clauses in general

(cf. Freywald 2016, 2018).[6] This leads to the conclusion that V2 complement clauses, like other dependent clauses, are FinPs with no structure provided to enable fronting or dislocation procedures, cf. (10):

(10) *Jeder*$_i$ *hatte geglaubt,*
everybody had believed
[$_{FinP}$ *er*$_i$ *könne* [$_{TP}$ *hinterher unbemerkt verschwinden*]].
he could afterwards unnoticed disappear
'Everybody thought s/he could disappear unnoticed afterwards.'

These assumptions need to be further supported by profound empirical studies. Hence, further investigation is necessary. Remaining open questions concern, for example, the category and number of the phrases that may occupy the prefield position in V2 complement clauses. In addition, it is not self-evident that the positions of fronted finite verbs and the prefield positions are indeed the same in complement clauses and in main clauses. These issues need to be addressed, and founded on a broader empirical basis.

To make a first attempt in achieving this aim, I will now turn to complement clauses in which a complementiser is repeated after some inserted linguistic material. The analysis of the unusually expanded left periphery of these complement clauses shall deepen our understanding of the positions in the left periphery of complement clauses that are potentially available or can be made available if necessary. The analysis will be carried out on the basis of data from corpora of Contemporary German.

3 The syntax of complementiser doubling

Complementiser doubling – or, maybe more fittingly, complementiser resumption – comprises a complementiser which is resumed directly after an often rather complex and far-reaching phrase within a complement clause. This was the case

6 This is reminiscent of Haegeman's characterisation of central adverbial clauses in English as lacking a fully articulated C-domain altogether (as opposed to peripheral adverbial clauses and root clauses which, according to her, both possess a full C-domain; cf. Haegeman 2003, 2006, 2010). Contrary to similar accounts for German (e.g. in Coniglio 2011, Frey 2011, 2012, and Frey & Truckenbrodt 2015), I do not see any internal structural differences between different types of finite subordinate clauses. With respect to structural main clause phenomena they all behave identically (cf. Freywald 2018 for detailed argumentation).

in the object clause in (7) above; (11) represents a similar double-complementiser construction, this time depending on a noun:

(11) *"Weit verbreitet ist die Annahme, **dass** wenn in einem*
widely spread is the assumption that when in an
*afrikanischen Land die Amtssprache Englisch ist, **dass** auch*
African country the official.language English is that also
alle Englisch sprechen", sagt Gabriele Slezak.
all English speak says G. S.
'"It's a wide-spread assumption that when the official language is English in an African country, all people actually speak English," says Gabriele Slezak.'
(DeReKo, P09/MAI.00587, "Die Presse" [Austrian newspaper], p. 9, 06/05/2009)

Typically, the constituent that is sandwiched between the two complementisers is an embedded clause itself, as illustrated in (11), or an XP which contains an embedded clause (cf. (12a)). However, as shown in (12b), simple DPs can be sandwiched, too:

(12) a. Sandwiched DP + relative clause
BL: *könnte man sich ja natürlich jetzt auch*
could one REFL PTCL of.course now also
*vorstellen da mit der Wiedervereinigung, **dass** die*
imagine there with the reunification that the
*Leute, die nich in Grenznähe wohnen, **dass** die*
people who not in border.proximity live that these
das auch nich...
this PTCL not
'One could imagine of course, concerning the reunification, that those people who didn't live close to the border didn't ...'
Anton: *... das nich mitgekriegt haben*
this not realised have
'... didn't realise it.'
(Berlin Wendekorpus,[7] Transcript BW W17, 1996)

7 The "Berlin Wendekorpus" is a collection of interviews that were conducted from 1992 to 1996 in East and West Berlin. The interviewees comment on their experiences and their views related to the fall of the Berlin Wall. The corpus comprises 250,000 tokens; it is electronically available at the Leibniz-Institut für Deutsche Sprache, Mannheim. For further details cf. Dittmar & Bredel (1999) and the corpus website http://agd.ids-mannheim.de/korpus_index.shtml

b. Sandwiched object DP
und vor allen Dingen denk ich, ***dass*** *so bestimmten*
and before all things think I that PTCL certain
Worten eh ***dass*** *den so bestimmte Charaktereigenschaften*
words uh that those PTCL certain character.attributes
angedichtet werden, ne Wertung
imputed get a judgement
'And above all, I think that certain words are imputed with certain characteristics, with a judgement.'
(Berlin Wendekorpus, Transcript BW W20, 1994)

In Betten (1980), and later in Meinunger (2011), structures like (11) and (12a) are interpreted as performance errors which result from the increased processing load that is caused by the embedded clause directly after the first complementiser. According to Meinunger's (2011) analysis, the second *dass* serves to save an otherwise infelicitous sentence structure. In his view, the resumption of a complementiser represents "a highly frequent repair strategy in oral communication" (Meinunger 2011: 368). Psycholinguistic studies on complementiser doubling in English and Spanish support the view that the second complementiser is added in order to minimise processing costs (Staum Casasanto & Sag 2008, Frank 2016). In English, reading times were significantly shorter in clauses where a second *that* was present after an extensive initial non-subject phrase (cf. (13a)) than in the equivalent clauses without a resumptive *that* (cf. (13b)):

(13) a. *John reminded Mary* ***that*** [*after he was finished with his meeting*] ***that*** *his brother would be ready to leave.*
b. *John reminded Mary* ***that*** [*after he was finished with his meeting*] *his brother would be ready to leave.* (Staum Casasanto & Sag 2008: 3)

Leaving aside the possible impact of the categorial word order differences between the SVO languages English and Spanish and the SOV language German, factors such as working memory and processing difficulties are certainly influential in the German complementiser-doubling construction, too. Yet, this still remains to be proved experimentally for German.

In addition, there are three facts which suggest that the intention on the speaker's side to repair a sentence structure that went astray and/or to ease processing might not be the whole story. First, double complementisers occur regularly also in written texts, for example in newspapers. Performance errors and on-line repair strategies are characteristics of spoken language and of

informal, unedited written texts, but not so much of newspaper articles having undergone proof-reading. The examples in (14) represent two further newspaper clippings from the DeReKo corpus[8]:

(14) a. *Aber grundsätzlich muss man immer davon ausgehen,* ***dass*** *wenn das Wort Elite fällt,* ***dass*** *dann eine kleine Gruppe von Menschen einer großen gegenüber gestellt wird aus Gründen, die nichts mit Talent zu tun haben.*
but principally must one always thereof assume that when the word elite drops that then a small group of people a large.one opposite put is out.of reasons which nothing with talent to do have
'Principally, you need to assume that when the word "elite" is mentioned a small group of people is contrasted with a large one – for reasons which do not have anything to do with talent.'
(DeReKo, P04/SEP.02878, "Die Presse" [Austrian newspaper], p. R4, 25/09/2004)

b. *Manche befürchten,* ***dass,*** *wenn jetzt die Macht des Icann-Board begrenzt wird,* ***dass*** *dann indirekt auch die Einflussmöglichkeiten der Regierungen beschnitten werden.*
some fear that when now the power of.the I. restricted is that then indirectly also the influence.possibilities of.the governments cut are
'Some people are afraid that when the power of the Icann Board will be limited now, the scope of influence of the governments will, in an indirect way, also be cut.'
(DeReKo, NZZ15/SEP.02147, "Neue Zürcher Zeitung" [Swiss newspaper], p. 68, 18/09/2015)

8 The DeReKo corpus (**De**utsches **Re**ferenz**ko**rpus – German Reference Corpus) was compiled at the Leibniz-Institut für Deutsche Sprache, Mannheim. It contains written language, predominantly newspaper texts but also belletristic, scientific and popular scientific texts, and other text types from 1956 onwards and it is continuously developed (cf. Kupietz & Lüngen 2014). The corpus covers the main German-speaking area (Germany, Austria and Switzerland). It is linguistically annotated and searchable online. In February 2018, it had a size of 42 billion tokens. For further information cf. Lüngen (2017) and the corpus website http://www.ids-mannheim.de/dereko.

Second, in the case of processing difficulties it is to be expected that repair strategies would apply across the board. However, as far as can be judged from the data analysed so far, doubled complementisers involve only certain types of sandwiched material, namely delimitative expressions, or more precisely: frame-setting and contrastive topics. The most frequent and most typical elements that induce complementiser doubling are (i) adverbial clauses introduced by *wenn* 'when, if' (cf. (7), (11), and (14)), and (ii) DPs with restrictive meaning, for example when modified by a restrictive relative clause or when contrasted (cf. (12a,b)). Apparently, other subordinate clauses and extensive XPs, which ought to cause the same processing difficulties as *wenn*-clauses or relative clauses, are much less apt to complementiser doubling when embedded directly after the complementiser. A corpus study in the same corpus of written language, DeReKo, revealed that after adverbial clauses introduced by the temporal complementiser *sobald* 'once, as soon as' this complementiser is resumed not in a single case.[9]

In contrast, double-complementiser constructions with an embedded *wenn*-clause occur quite regularly. The corpus search for the sequence '*dass wenn*' revealed 15,468 hits. To reduce the number of results to a manageable amount the corpus search was restricted to sequences of '*dass wenn*' followed by a second *dass* within the next 12 words.[10] This generated 675 hits. In this predefined, and therefore inevitably biased, sample the number of clauses with complementiser doubling and a sandwiched *wenn*-clause between the two complementisers amounts to 30% (N=204).[11]

9 The corpus was searched for the sequence '*dass sobald*'. The resulting total amount of 445 hits was manually checked for complementiser doubling. The query syntax was '(dass sobald) oder (daß sobald)'. The complementiser was never doubled after a *sobald*-clause, cf. (i) for illustration:

(i) *Die Wissenschaftler vermuten,* ***dass****,* [*sobald die Tage länger werden*
the scientists presume that as.soon.as the days longer become
und die Sonne die Erde wieder wärmt], *ähnlich wie bei vielen Tieren*
and the sun the earth again warms similar as with many animals
auch beim Menschen eine Art Nestbautrieb ausgelöst wird.
also with.the human a kind.of nest-building.instinct triggered is
'The scientists presume that as soon as the days get longer and the sun warms the earth, similar to many animals, a kind of nest-building instinct is triggered also in humans.'
(DeReKo, RHZ13/MAR.24054, "Rhein-Zeitung" [German newspaper], p. 8, 09/03/2013)

10 The query syntax was '((dass wenn) oder (daß wenn)) /+w1:12,s0 (dass oder daß)'. The resulting 675 hits were checked by hand.

11 Still, the vast number of complex *dass*-clauses with an embedded *wenn*-clause directly following *dass* do not show complementiser doubling, even if the *wenn*-clause is itself very complex:

Third, the sandwiched phrases are – even if embedded clauses themselves – often relatively short, cf. the examples in (15). In these cases, processing difficulties do not seem very likely and no need for repair would plausibly arise (but still, this needs to be tested experimentally).

(15) a. *Mario Leber versucht dies mit attraktiven Trainings, welche Freude*
M. L. tries this with attractive trainings which pleasure
*am Sport vermitteln sollen, und meint, **dass**, wenn er*
at.the sports give shall and thinks that if he
*das erreicht, **dass** sich dann auch die Erfolge wieder*
this achieves that REFL then also the successes again
einstellen.
ensue
'Mario Leber tries this with attractive trainings which shall give pleasure in sports, and he thinks that if he manages this the successes will ensue again.'

(DeReKo, A07/NOV.04545, "St. Galler Tagblatt" [Swiss newspaper], p. 67, 09/11/2007)

b. *"Aber es ist klar, **dass** wenn es mehr kostet, **dass** wir*
but it is clear that if it more costs that we
dann mit einem Nachschlag kommen", betonte Kurz.
then with a second.helping come emphasised K.
'"But it is clear that if it costs more we go for a second helping," emphasised Kurz.'

(DeReKo, M08/MAR.17938, "Mannheimer Morgen" [German newspaper], p. 33, 07/03/2008)

(ii) *Es kann nicht sein, **dass**, [wenn eine Bank einen Garantieschirm beantragt,*
it can not be that if a bank a warrant requests
wo es nicht darum geht, dass Geld fließen soll, sondern nur, dass
where it not about.it goes that money flow shall but only that
der Bund mit seinem Namen eine Garantie für Interbankengeschäfte
the federal.state with its name a guarantee for interbank.trading
gibt], wir jetzt vor lauter Bürokratie nicht zu Potte kommen.
gives we now out.of sheer bureaucracy not to pot come
'It cannot be that out of sheer bureaucracy we cannot cope with a situation when a bank applies for a warrant where no money is to be transferred but where the federal state provides a guarantee for interbank trading only by its name.'
(DeReKo, PHH/W19.00015, minutes of a parliament meeting in Hamburg, 19/11/2008)

Ferraresi (2016), too, provides an example with a rather short element, a DP, between the two doubled complementisers (cf. also the similar ex. (12b) above):

(16) *Das waren auch Menschen ja, wie die Deutschen. Aber, die*
this were also humans PTCL like the Germans but they
*ham nicht eingesehen, **dass** die Menschen, **dass** die auch*
have not accepted that the people that they also
Rechte haben. Das hat mich sehr interessiert.
rights have this has me much interested
'They were also human beings, right, like the Germans. But they didn't accept that these people also have rights. This interested me a lot.'
(Ferraresi 2016: 95; my translation)

Complementiser doubling has been described for other languages as well, such as English (Iatridou & Kroch 1998, McCloskey 2006, Staum Casasanto & Sag 2008, Haegeman 2012, Radford 2012), Spanish (Villa-García 2012, Frank 2016) and European Portuguese (Mascarenhas 2014):

(17) English
a. *I truly wish **that** if something like that were to happen **that** my children would do something like that for me.*
(Switchboard Corpus; in Staum Casasanto & Sag 2008: 2)

b. *The most we can hope for is **that** those people who are blood donors **that** they continue to donor blood.*
(Health spokesman, BBC Radio 5; in Radford 2012: 19)

c. *I hope **that** when they are adults **that** at no time will they forget the work that their parents put into their education.*
(Haegeman 2012: 85)

(18) Spanish
*Me dijo **que** esa guitarra vieja (**que**) iba a venderla.*
CL_{1SG} told that that guitar old that was going to sell CL_{3SG}
'S/he told me that s/he was going to sell that old guitar.'
(Villa-García 2012: 41)

(19) European Portuguese
a. *Acho **que** se lhe ligasses **que** tudo se resolveria.*
think that if him/her called that everything REFL solve
'I think if you called him/her everything would turn out fine.'

b. *Duvido* ***que*** *a Ana* ***que*** *goste de ópera.*
doubt that the Ana that likes opera
'I doubt that Ana likes opera.' (Mascarenhas 2014: 107)

Previous studies on complementiser doubling offer different analyses for this construction. For English, complementiser doubling is analysed as an instance of CP recursion. The phrase between the two complementisers is analysed either as specifier of the lower CP (e.g. in Iatridou & Kroch 1992 and Radford 2012) or as adjoined to the lower CP (for example in McCloskey 2006 and Haegeman 2012):

(20) a. $[_{CP+}\,[_{C+}$ *that* $[_{CP}$ XP $[_{C}$ *that* ... (sandwiched XP in the lower SpecCP)
b. $[_{CP+}\,[_{C+}$ *that* $[_{CP}$ XP $[_{CP}[_{C}$ *that* ... (sandwiched XP adjoined to the lower CP)

For Spanish and European Portuguese (and also for early Romance languages, cf. Paoli 2007) complementiser doubling is analysed within a cartographic approach à la Rizzi (1997). Taking into account the division into high and low complementisers – put forward, e.g., in Poletto (2000), Grewendorf & Poletto (2011), and Ledgeway (2015) –, it is assumed by Paoli (2007), Villa-García (2012), Mascarenhas (2014), and Frank (2016) (among others) that in double-complementiser constructions the high Force head and the lower head of the Topic Phrase, TopP, are both filled by the complementiser *que* (or *che* in Italian). The intermediate constituent is hosted by the specifier of TopP which accounts for its topic status. The resulting structure is given in (21):

(21) $[_{ForceP}\,[_{Force}$ *que* [... $[_{TopP}$ Topic-XP $[_{Top}$ *que* ...

As Mascarenhas (2014) has shown for European Portuguese, non-topics are ungrammatical between doubled complementisers:

(22) European Portuguese
a. **Eu acho* ***que*** *ninguém* ***que*** *leu esse livro.*
I think that no one that read that book

b. **Eu acho* ***que*** *muitas pessoas* ***que*** *leram esse livro.*
I think that many people that read that book
(Mascarenhas 2014: 109)

To my knowledge, the contributions by Meinunger (2011) and Ferraresi (2016) are the only two studies that offer a syntactic analysis for complementiser doubling

in German. Both of them propose a CP recursion analysis with a redoubled C head hosting the two complementisers. Accordingly, in these analyses the specifier position of the lower CP is filled by the intermediate phrase (both proposals adopt suggestions by McCloskey 2006, cf. (20) above). The two approaches differ from each other, however, with respect to functional explanations. Meinunger (2011) treats complementiser doubling as a repair strategy which serves to mend a non-manageable complex structure. Ferraresi (2016), on the other hand, considers complementiser doubling as tied to topic marking. She links the positioning of a phrase between the two complementisers to left dislocation, which is a typical topic marking construction (cf., e.g., Givón 1983, Jacobs 2001; see also fn. 12 below).

In the light of the corpus data given above, the topic marking hypothesis seems the most promising one to me. The CP recursion analysis cannot grasp the information-structural status of the phrase within the specifier of the lower CP. The data, however, suggest that topichood of the sandwiched phrase highly increases the likelihood of complementiser doubling. By my intuition, it is impossible to have a phrase between the two complementisers that cannot interpreted as a topic, such as quantifying phrases:

(23) **Ich gehe davon aus,* ***dass*** *mehr als drei Spiele*
I go thereof out that more than three matches
hintereinander, ***dass*** *die sowieso keiner gewinnt.*
consecutively that they anyway nobody wins
'I assume that nobody wins more than three matches in a row, anyway.'

This view is further supported by the fact that the phrase between the two complementisers is almost always taken up by a resumptive pronoun or adverb later in the clause (it does not seem to be obligatory, though), for example by *dann* 'then' in (14a,b), (15a,b) and (26a,c), and the demonstrative pronouns *die*, *den(en)* and *das* 'these, those, this' in (12a), (12b) and (26b), respectively.

Strikingly, these observations come very close to the findings for Spanish and European Portuguese. However, it does not seem appropriate simply to transfer the analysis for Portuguese to German, as, so far, there is no independent evidence that there are high and low complementiser positions in German. Rather, I will argue in favour of an analysis which reconciles the recursion account with a cartographic approach.

In this analysis, not only the layer which contains the complementiser (= FinP) is redoubled but also the top-most layer of the area to the right of the complementiser (the "middle-field" in German clause structure). As shown in Freywald (2018), this top-most layer involves framesetting topics and shifting

topics – which are exactly the elements we find sandwiched between the two complementisers in double-complementiser constructions.

The idea that there is a clause-internal topic position in German goes back to Frey (2004, 2010), who argues that the position at the left edge of the middle-field – directly below FinP – is designated for topics. This layout of the left periphery of the middle-field has been further refined in Freywald (2018). There, based on previous work on the subdivision of the topic layer and the functional specification of different topic positions in main clauses (cf. Benincà & Poletto 2004, Frascarelli & Hinterhölzl 2007, Speyer 2008, Petrova 2012, among others), I present data from adversative adverbial clauses which show that the left periphery of the middle-field mirrors the structural outline of the prefield in terms of topic positions. In particular, I come to the conclusion that the subdivision of the topic layer into a "high topic field" (comprising framesetting topics and shifting topics) and a "low topic field" (containing continuing/familiarity topics), as proposed by Frascarelli & Hinterhölzl (2007), is also present in the middle-field in subordinate clauses. These observations lead to the structural representation in (24) (Comp: complementiser; WP: Wackernagel position):

(24) The left periphery of the middle-field in German

	high topic field	*low topic field*	
[FinP Comp WP	[FrameP [ShiftTopP	[ContTopP	[TP ...]]]]]

(Freywald 2018: 281)

This structure can now be applied to double-complementiser constructions. As shown in the data above, the material between doubled complementisers involves a framesetting topic, such as a *wenn*-clause, or a contrastive topic (the latter being classified as a shifting topic, which means as a „newly-changed or newly returned topic" in the sense of Givón 1983: 9).[12] It is hardly imaginable to have a familiarity topic in-between doubled complementisers (I thank an anonymous reviewer for pointing this out to me) – and there is indeed no support in the corpus data for this. The syntactic structure we arrive at is given in (25). It reflects both the recursive nature of German complementiser

12 Moreover, shifting topics are typically syntactically marked by left dislocation patterns in many languages (cf. Haiman 1978: 572, Reinhart 1981: 64, Givón 1983: 31ff.; for German: Jacobs 2001). This might serve as an explanation for the frequent occurrences of resumptive pronouns and adverbials in double-complementiser constructions (see examples (12), (14)–(16) and (26)).

doubling and the status of framesetting or shifting topic of the phrase between the two complementisers:[13]

(25) [$_{FinP+}$ [$_{Fin+}$ *dass* [$_{FrameP/ShiftTopP+}$ Topic-XP [$_{FinP}$ [$_{Fin}$ *dass* [$_{FrameP}$ [$_{ShiftTopP}$ [$_{ContTopP}$ [$_{TP}$ …

At the same time, (25) accurately captures that clauses with complementiser doubling are still fully embedded, subordinate clauses. The fact that they do not have root properties indicates that they lack a full C-domain. For example, they can be interpreted within the scope of negation in the matrix clause (26a), and they are part of the matrix illocution (26b). If depending on a noun, they can be fronted together with this head noun to the prefield of the matrix clause (26c).[14]

13 The recursiveness of complementiser doubling is further supported by the fact that – if rarely – the complementiser can also be tripled, adding a further layer of FinP–FrameP/ShiftTopP which yields the structure in (i) (for similar evidence in European Portuguese, cf. Mascarenhas 2014). An attested example from the DeReKo corpus is given in (ii):

(i) [$_{FinP++}$ [$_{Fin++}$ dass [$_{FrameP/ShiftTopP++}$ Topic-XP [$_{FinP+}$ [$_{Fin+}$ dass [$_{FrameP/ShiftTopP+}$ Topic-XP [$_{FinP}$ [$_{Fin}$ dass [$_{FrameP}$ [$_{ShiftTopP}$ [$_{ContTopP}$ [$_{TP}$ …

(ii) *88 Prozent der Niederösterreicher sind mit der Landesverwaltung*
88 percent of.the Lower-Austrians are with the state.administration
zufrieden. Und besonders erfreulich ist, ***dass,*** *wenn man dann schaut,*
content and particularly pleasant is that if one then looks
dass *die, die mit der Verwaltung zu tun hatten,* ***dass*** *die*
that those who with the administration to do had that they
dann in einem besonders hohen Ausmaß zufrieden sind.
then in a particularly high extent content are
'88 percent of the Lower-Austrians are content with the state administration. And it's particularly pleasing that, if you look closely, those who were concerned with the administration are content to an especially high extent.'
(DeReKo, PNO/W17.00015, minutes of a meeting of the parliament of Lower Austria, St. Pölten, 15/06/2009)

14 Furthermore, variable binding is unproblematic. At this stage of research, there is no attested example from the corpus, but it is fairly easy to construct one:

(i) *Jeder*$_i$ *ist fest davon überzeugt,* ***dass*** *wenn er*$_i$ *mindestens ein*
everybody is firmly thereof convinced that if he at.least a
halbes Jahr trainiert und den Trainingsplan streng einhält, ***dass*** *er*$_i$
half year trains and the training.plan strictly observes that he
dann den Marathon auch gewinnen kann.
then the marathon PTCL win can
'Everybody is firmly convinced that if s/he trains for at least half a year and strictly observes the training schedule s/he can win the marathon.'

(26) a. Complementiser doubling in the scope of negation
"Es stimmt eben nicht, ***dass****, wenn man kein Rechtsstaat*
it is.true ptcl not that if one no law.state
ist, ***dass*** *man dann automatisch ein Unrechtsstaat ist",*
is that one then automatically a illegitimate.state is
so Gregor Gysi.
so G. G.
'"It's not true that if you aren't a state of law that you are automatically an illegitimate state," said Gregor Gysi.'
(DeReKo, SZE14/DEZ.10503, "Sächsische Zeitung" [German newspaper], p. 38, 27/12/2014)

b. Complementiser doubling in the scope of an illocutionary operator
Glauben Sie, ***dass*** *wenn es jetzt Kindergeld für alle*
believe you that if it now family.allowance for all
Mütter gibt, ***dass*** *das als Sozialabbau betrachtet wird von*
mothers exists that this as social.cutback considered is by
den Menschen?
the people
'Do you believe that if there is a family allowance for all mothers from now on this will be considered as cuts in social services?'
(DeReKo, PNO/W15.00049, minutes of a meeting of the parliament of Lower Austria, St. Pölten, 16/05/2002)

c. Complementiser doubling within a topicalised noun phrase
[*Die Meinung,* ***dass*** *wenn man den Hund über Tage*
the opinion that when one the dog during day
wegsperrt, ***dass*** *er dann froh ist, mit einem arbeiten*
locks.up that he then glad is with one work
zu dürfen], *ist zwar leider weit verbreitet, aber*
to may is PTCL unfortunately widely spread but
ich denke auch, selbstredend.
I think also self.telling
'The view that your dog will gladly work with you when you lock him up during daytime is unfortunately very common but, I think, also very telling.' (Internet forum entry, 2011)

To conclude, complementiser doubling does not change the status of the clause as an embedded complement clause. The 'extra' complementiser position and the 'extra' topic position are created by recursion of the FinP together with a topic position that belongs to the "high topic field".

4 Conclusion: Implications for V2 complement clauses and open issues

So far, the analysis of complementiser doubling supports the view that subordinate clauses do not possess an articulated C-domain above FinP. Their categorial status is that of FinP even if the complementiser is doubled. In the latter case, the additional structure to the left of the complementiser arises from recursion of FinP and the top-most topic position of the middle-field. Hence, the assumption that V2 complement clauses also lack a fully articulated C-domain – just like any other subordinate clause – is not refuted. The syntactic structure in (10) is given again in (27):

(27) *Jeder*$_{i}$ *hatte geglaubt,*
everybody had believed
[$_{FinP}$ *er*$_{i}$ *könne* [$_{FrameP}$ [$_{ShiftTopP}$ [$_{ContTopP}$ [$_{TP}$ *hinterher* *unbemerkt*
he could afterwards unnoticed
verschwinden]]]]].
disappear
'Everybody thought s/he could disappear unnoticed afterwards.'

The structure in (27) implies that V2 complement clauses do not have access to the sentence–discourse interface which is represented by the C-domain in main clauses. This is borne out by the fact that V2 complement clauses do not permit any discourse-, speech act- or speaker-related elements, such as certain modal particles, evaluative and epistemic expressions and speech act adverbials (cf. Jacobs 2018, this volume):

(28) a. *Ich hoffe/fürchte, es wird morgen *ja/ *doch/ *offen*
I hope/fear it will tomorrow PTCL PTCL frankly
gesagt regnen.
said rain
'I hope / I'm afraid it will – frankly speaking – rain tomorrow.'
(Jacobs, this volume)

b. *Es wär besser, ich* ***rufe*** ** leider/sicherlich/zum Glück*
it was better I call unfortunately/certainly/fortunately
gleich jetzt den Vermieter an.
outright now the landlord at
'It would be better if I call the landlord unfortunately/certainly/
fortunately straight away.'

The study presented yielded only first hints as to the detailed structure of the left periphery of V2 complement clauses. Many open questions remain: It is still unclear how the phrases between the two complementisers are restricted in terms of category, function and number. This question is equally unanswered for phrases occupying the prefield in V2 complements; in all probability, the restrictions on prefield elements differ in independent vs dependent V2 clauses. And finally, it is fairly unknown in what way length and/or complexity of a constituent at the left edge of a complement clause facilitate recursion and thereby complementiser doubling. What we observe is an interplay between topichood and length. This also underlines that complementiser doubling is not simply a performance error but a systematic grammatical option that is chosen for functional reasons (cf. for a similar view on European Portuguese Mascarenhas 2014). The interaction of information-structural strategies and of strategies for reducing processing costs calls for further investigation. – These questions, together with many others, can be answered only on a profound empirical basis, using experimental methods and large corpora.

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Roland Hinterhölzl

Assertive potential, speaker evidence and embedded V2

Abstract: In this paper, I argue that embedded V2 clauses are not coordinated independent speech acts, but are regular subordinated clauses that lack independent assertive force. I will show, however, that V2 in these clauses indicates that the embedded proposition is epistemically anchored to the speaker and argue that this assertive potential of embedded V2 clauses needs to be licensed by an assertive operator in the main clause accounting for their distributional properties.

1 Introduction

The phenomenon of V2 in adverbial and adnominal clauses has received a lot of attention in recent years. This is due to their peculiar syntactic and semantic properties. As far as V2 in adnominal clauses (V2Rs) is concerned, the content of these relative clauses is asserted, indicating – given certain theoretical assumptions further discussed below – their non-subordinated status. At the same time V2Rs allow for a restrictive interpretation, illustrated in (1), indicating their subordinated status, since the restrictive reading under standard assumptions requires that the relative clause is interpreted within the DP heading it.

(1) Dieses Blatt hat eine Seite, die ist halt ganz schwarz (a sheet has two sides)
This sheet (of paper) has a side that is completely black

As far as adverbial clauses are concerned, Haegeman (2012) proposed a distinction between central and peripheral adverbial clauses, where the former represent relations between propositions and the latter relations between speech acts. But the fact is that in colloquial spoken German, both types allow for V2 order, a correlate in the matrix clause and the presence of modal particles, as has been shown by Catasso (2016). The adverbial clause in (2) is a peripheral adverbial clause representing an adhortative meaning, but is introduced by a correlate in the matrix clause, generally taken to be indicative of a subordinating relation (cf. Antomo & Steinbach 2010), while the adverbial clauses in (3) and (4)

Roland Hinterhölzl, Università Ca'Foscari, Venice

https://doi.org/10.1515/9781501508141-005

represent a propositional reading, but license both V2 and a modal particle (MP), taken to be indicative of the presence of assertive force.

(2) Das ganze kam eigentlich deshalb, weil (:) versuch mal, einem alten blinden Hund klar zu machen …
The whole (thing) came about for the reason because try MP to make clear to an old blind dog to …!

(3) a. Ich musste heute (deshalb) gar nichts kochen, weil ich hab ja noch etwas gehabt vom Braten am Sonntag
I had today (for this reason) nothing to cook, because I have MP still something had from the roast from Sunday

b. Resi, i-hoi-di heit mim Traktor o, wei lustig bin-i hoit a (Die Original Zillertaler)
Therese, ich hole dich heute mit dem Traktor ab, weil lustig bin ich halt auch
Theresa, I come and fetch you with my tractor today, because I am also funny

The paper is organized in the following way. Section 2 introduces the influential analysis of V2Rs by Gärtner (2001, 2002). In Section 3, the properties of V2Rs are discussed. Section 4 shows that adverbial clauses exhibiting V2 (V2-adverbials) are subject to the same distributional restrictions as V2Rs are. Section 5 compares the properties of V2-adverbials with those exhibited by complementizer-introduced complement clauses with V2 (V2C-clauses) and shows that they share core distributional properties with V2-adverbials, calling for a common analysis of V2Rs, V2-adverbials and V2C-clauses. Section 6 sketches a unified account of V2Rs, V2-adverbials and V2C-clauses. Section 7 discusses the important parallelism in interpretative properties between mood alternations in Italian and the positional alternations of the finite verb in German that underlie the unified account sketched in Section 6 and shows how the properties of V2Rs can be captured in the unified account. Section 8, finally summarizes the paper and discusses some consequences of the account presented.

2 V2 in adnominal clauses

V2 has been argued to be a root phenomenon. Hence clauses containing V2 should display root-like properties. One important property of root clauses is that they – contrary to regular embedded clauses – can represent different types of

speech acts: assertions, questions, commands and so on. Gärtner (2001, 2002), posits an analysis in which two (main) clauses are coordinated, explaining the presence of V2 in the relative clause and relating it to the proto-assertional force of the relative.

(4) [$_{\pi P}$ [$_{CP1}$ Das Blatt hat eine Seite] [$_{\pi^{\circ}\,REL}$ [$_{CP2}$ die ist ganz schwarz]]
'The sheet has one side that is all black.' (Gärtner 2001: 105)

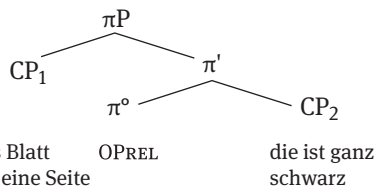

Figure 1: Syntactic representation of V2 relative (Gärtner 2001: 105).

This syntactic analysis renders the semantic interpretation of V2-relatives a rather complex issue, since the content of the relative clause must be integrated into the interpretation of the DP heading it during the computation of the matrix clause to derive the correct restrictive interpretation. This analysis has been extended to V2-adverbials by Antomo & Steinbach (2010). The following section illustrates the crucial distributional and interpretational properties of V2Rs discussed by Gärtner (2001, 2002).

3 Properties of V2Rs

The first property concerns the fact that V2Rs cannot occur in their presumed base-position and need to be extraposed obligatorily, as is illustrated in (5).

(5) a. *Hans hat eine Frau, die (*hat) blaue Augen (hat), getroffen
Hans has a woman, that (has) blue eyes (has), met
b. Hans hat eine Frau getroffen, die (hat) blaue Augen (hat)

The second property concerns the fact that the head noun of the relative clause cannot be in the scope of a negative, interrogative or conditional operator in the matrix clause, as is illustrated in (6a) for a negative operator and in (6b) for a question operator.

(6) a. Kein Professor mag eine Studentin, die {*zitiert} ihn nicht
no professor likes a student.FEM who cites him NEG
{zitiert}.
cites
'No professor likes a student who doesn't cite him.' (Gärtner 2002: 39)

b. Mag Professor Müller eine Studentin, die {*zitiert} ihn nicht {zitiert}?
likes professor Müller a student.FEM who cites him NEG
'Does Professor Müller like a student who doesn't cite him?'
Gärtner (2002: 39)

The third property concerns the determiner restriction. In V2Rs the head noun must be an indefinite or weak DP, as is illustrated in (7) (data taken from Catasso & Hinterhölzl 2016).

(7) a. Das ist ein Buch, das hat keinen Punkt und kein Komma.
this is a book that.NOM has no full-stop and no comma
'This is a book that has no full stops and no commas.' (DLF, Sept. 9th, 2010)

b. Es gibt (viele) Leute, die haben tolle Ideen – nur
EXIST many people who.NOM have great ideas only
es passiert relativ wenig.
EXPL happens quite little
'There are (many) people who have great ideas – however, very little is going on.' (tlz, Jul. 6th, 2014)

(8) a. Ich kenne einen, dem hat ein Zugunglück das
I know one that.DAT has a train-accident the
Leben gerettet.
life saved
'I know a man whose life was saved by a train accident.'
(character's direct speech from Eckhard Bahr 2007: 111)

b. Es gibt auch einige, die würde man gerne
EXIST also some that.ACC would IND.PRON.3.P gladly
aus der Geschichte schubsen.
out the story nudge
'There are some [passages] that one would just love to strike out.'
(amazon.de, online user's comment, Jun. 30th, 2012)

The fourth property concerns the fact that V2Rs can only be introduced by a d-pronoun, as illustrated by the contrast between (9a) and (9b).

(9) a. Es gibt Probleme, die/ (*welche) sind nicht lösbar.
EXIST problems that.NOM that.NOM are not solvable

b. Es gibt Probleme, die/ welche nicht lösbar sind.
EXIST problems that.NOM that.NOM are not solvable
'There are problems that are not solvable.'
(Wiener Zeitung, Mar. 28th, 2013)

4 V2 in adverbial clauses

It is interesting to note that both V2-relatives and V2-adverbials are subject to the same conditions. They are obligatorily extraposed and may not appear in the scope of negation, an interrogative or a conditional operator, as is illustrated in (10) – (12). In (11b), capital letters in the conjunction indicate that the adverbial clause is to be read as being in the scope of the matrix negation. If the adverbial clause is interpreted as taking scope outside of the negation, V2 order is possible.

(10) * weil er (*war) krank (war), ist Hans zu Hause geblieben
because he (was) sick (was) has John at home remained

(11) a. *Hans traf keine Frau, die (*hat) blaue Augen (hat)
Hans met no woman, that (has) blue eyes (has)
b. Hans ist nicht gekommen, WEIL er (*ist) krank (ist)
Hans has not come because he (is) sick (is)

(12) a. Traf Hans eine Frau, die (*hat) blaue Augen (hat)?
Did Hans a woman meet that (has) blue eyes (has)?
b. Ist Hans gekommen, weil er (*ist) krank (ist)?
Has Hans come because he (is) sick (is)?

The strength of Gärtner's original analysis of V2Rs is that he convincingly argues that these are the contexts that fail to set up a discourse referent for the interpretation of the weak demonstrative element introducing V2-relatives, thereby connecting the first three properties to the type of the relative pronoun requested: V2Rs must be headed by a discourse-anaphoric d-pronoun that is only licensed, if after processing the main clause (hence the obligatory extraposition of the relative clause) a discourse referent has been established in the semantic representation, excluding definite head nouns in general and indefinite head nouns in the scope of a negative, interrogative or conditional operator.

I can see three major drawbacks with Gärtner's seminal analysis. The first important drawback is that this explanation does not carry over to V2-adverbials, which share the first two properties with V2Rs. The second drawback that I will not discuss in any detail here is the observation that conditional clauses normally do allow for the set up of a discourse referent, as is illustrated in (13).

(13) If a man loves a woman, he sends her red roses

The third drawback concerns the fact that at some point in the derivation the d-pronoun must be converted into a relative operator in Gärtner's account, otherwise (14a) should have the same interpretation as (14b). It is not very clear how this is achieved. The d-pronoun in V2Rs must have the presupposition of a d-pronoun but the denotation of an operator. In Gärtner's account a d-pronoun is selected from the lexicon to which an operator feature is added in the course of the derivation.

(14)	a.	Apfeldorf	hat	viele	Häuser,	die	stehen	leer.
		Apfeldorf	has	many	houses	that	stand	empty
	b.	Apfeldorf	hat	viele	Häuser.	Diese	stehen	leer.
		Apfeldorf	has	many	houses.	These	stand	empty

Finally note that also the assumption of a coordinated independent speech act or of an embedded independent speech act cannot account for these restrictions: Why should a speech act in the embedded or conjoined clause be dependent on the nature of the speech act in the matrix clause or in the first conjunct? Note in particular that there are without any doubt embedded speech acts: Hinterhölzl & Krifka (2013) argue that focus licenses assertive force (and hence the presence of modal particles) in what must be analysed as central adnominal and adverbial clauses in the terminology of Haegeman (2012).

First note that although the relative clause in (15) has a restrictive interpretation, indicated by the special determiner *jene / diejenige*, a modal particle is licensed by the occurrence of the scalar focus *erst vor 3 Minuten*. Modal particles are normally only licensed in appositive relative clauses, which are assumed to have independent illocutionary force anyway. Note also that there is no determiner restriction observable on the head noun of the relative clause, since the relative clause is headed by a definite NP. Remember that definite head nouns are excluded with V2Rs. Furthermore note that the relative clause in (15) is not subject to extraposition, as V2Rs are. All these observations indicate that these restrictions should be identified with the V2 property of the relative clause and

not directly with its illocutionary force as has been argued for in the work by Gärtner (2001, 2002).

(15) Peter hat die/jene Frau, die wohl erst vor 3 Minuten angekommen ist, angesprochen
Peter has that woman that *Part* only 3 minutes ago arrived is, addressed

Similar considerations apply to (16). The adverbial clause is in the scope of negation and thus unambiguously represents a central adverbial clause in the terminology of Haegeman (2012), nevertheless the occurrences of modal particles are licensed by the presence of contrastive focus on *gelogen* and *bloßgestellt*, arguing for the presence of assertive force in the adverbial clauses in (16).

(16) Er hat kein schlechtes Gewissen, weil er halt mal gelogen hat, sondern weil er Maria damit wohl bloßgestellt hat
He doesn't have a bad conscience because he has PAR PAR lied, but because he has Maria in this way PAR exposed (negatively)

This can be tested by a question tag. Frey (2016) proposes that a question tag like *nicht wahr?* or *oder?* indicates the presence of an independent assertion, as is illustrated in (17) and (18).

(17) Er hat kein schlechtes Gewissen, weil er halt mal gelogen hat, nicht wahr?, sondern weil er Maria damit wohl bloßgestellt hat, oder?

In both (17) and (3) above (repeated for convenience in (18) below), the question tag can be interpreted as modifying the assertion in the embedded clause.

(18) Ich musste heute (deshalb) gar nichts kochen, weil ich hab ja noch etwas gehabt vom Braten am Sonntag, nicht wahr?

These observations raise the following issues. First, we need to explain how it is possible that in (18) we are dealing with a causal relation between propositions, while the question tag test clearly shows that these are assertions. Second, the question arises how the difference in the interpretation of the adverbial clauses as being within or obligatorily outside of the scope of negation in (16) and (11b) respectively can be explained, if the adverbial clause in both cases is analysed as representing a separate (independent) speech act. In the following section we will take a closer look at the properties of V2 adverbials in comparison to V2 in complement clauses.

5 V2 in adverbial clauses and V2 in complement clauses

Frey (2016) proposes a finer grained distinction between central adverbial clauses (CACs), peripheral adverbials clauses (PACs) and non-integrated adverbial clauses (NIACs). In this approach, CACs are embedded in the matrix clause in a relatively deep position to allow for binding relations and they are assumed to express relations between eventualities. PACs, on the other hand, are also assumed to be part of the host clause but in a relatively high position, disallowing binding relations and are interpreted as expressing relations between propositions, while NIACs are assumed to be not embedded at all, they are so-called orphans, and are connected with the matrix clause at the discourse level and express a relation between speech acts (SA related reading).

Causal V2-clauses are treated as NIACs in his account, since they cannot occupy [Spec,CP] of the matrix clause, which Frey (2016) takes as main indicator of the syntactic integration of a clause. As is illustrated in (19), both an adverbial clause with an event related reading – a CAC – and an adverbial clause expressing a propositional relation – a PAC – can occupy [Spec,CP] in German, while adverbial clauses expressing a speech act related reading as in (19c) are excluded in this position. As is illustrated in (19d), a V2-adverbial clause patterns with NIACs with respect to this test.

(19) a. weil sie krank ist, ist Maria sehr bleich (event related reading)
b. weil sie bleich ist, ist Maria (wohl) krank (epistemic reading)
c. * weil du dich doch immer für sie interessierst, ist Maria krank (SA related reading)
d. * weil sie ist krank, ist Maria sehr bleich

For the sake of concreteness I will make the following proposal: A) a V2-adverbial clause with an event related reading is adjoined to FinP; B) a V2-adverbial clause with an epistemic reading is adjoined to EvidP and C) a V2-adverbial clause with a SA-related reading is adjoined to ForceP. D) Only the latter constitutes a separate independent speech act and expresses a relation between speech acts, while the former two express relations between propositions and do not constitute independent speech acts.

In this context, it is interesting to note that V2 in complement clauses in German and other Germanic languages is reported to be subject to the very same restrictions as V2-relative clauses and V2-adverbial clauses are (cf. Catasso

2016 and references cited there). Freywald (2008, 2009) shows that marginal occurrences of V2 complement clauses with a complementizer (V2C-clauses), illustrated in (20), should not be treated as performance errors but are subject to specific grammatical conditions.

(20) a. ??Ich würde sagen, dass beide haben ihre Performanzvorteile
(Freywald 2008, 2009)
b. ??Wir werden aber sehen dass diese Eigenschaft ist ganz zentral

Freywald (2009) observes that the licensing predicate is semantically bleached and that the content of the embedded clause cannot be presupposed. Thus factive verbs and all non-assertive matrix verbs, including matrix predicates in the scope of negation or an interrogative operator are excluded, as is illustrated in (21ab). She also notes that V2C-clauses cannot occur in [Spec,CP] of the matrix verb, as is illustrated in (21c).

(21) a. *Man kann nicht sagen, dass diese Eigenschaft ist ganz zentral
b. *Kann man sagen, dass diese Eigenschaft ist ganz zentral?
c. * Dass diese Eigenschaft ist ganz zentral, werden wir aber sehen

These observations are corroborated by complementizer introduced V2-complement clauses in North Germanic (Vikner 1995) and in Frisian (De Haan & Weerman 1986). V2C-clauses in Danish and Frisian fall under the very same restrictions: A) they can be embedded under verbs of saying or thinking; B) they cannot be embedded under factive or implicative predicates and C) if a licit predicate is negated or questioned, a V2C-clause is ungrammatical. Furthermore, a V2C-clause is ungrammatical in [Spec,CP] of the matrix clause, as is illustrated for Frisian in (22).

(22) a. Hy sei dat hy hie it antwurd net witen
he said that he has the answer not known
b. *dat hy hie it antwurd net witen, sei hy
c. dat hy it antwurd net witen hie, sei hy

The latter fact cannot be explained with the assumption that V2C-clauses constitute separate independent speech acts, as Frey has proposed for the case of V2-adverbial clauses. This property must be related to the V2-property of adverbial, adnominal and complementizer-introduced complement clauses.

6 The proposal

Alternatively, I will argue that V2-relatives, V2-adverbials and V2C-clauses are subordinated clauses and do not have independent assertive force. V2 indicates that the embedded proposition is epistemically anchored to the speaker and thus constitutes a precondition for an assertive speech act, given that the speaker can only then sincerely assert p, if he has (sufficient) evidence for the truth of p. I argue that V2 in embedded clauses targets EvidenceP, which is independently needed for the licensing of (some) modal particles, and occupies a position between ForceP and FinP in the system of Rizzi (1997).

V2-relatives, V2-adverbials and V2C-clauses therefore must be extraposed to EvidenceP in the matrix clause to enter into a local Agree-relation with an assertive operator that licenses their assertive potential. In other words, V2 serves to indicate that an embedded clause is anchored to the speaker and that the material in the embedded clause is part of the assertion licensed by an assertive operator in the matrix clause.

At this point the following question arises. If the embedded V2 clause must enter into a local relation with the matrix Force-head for interpretative reasons, why is it the case that all dependent V2 clauses are subject to obligatory extraposition in syntax? Why is it not sufficient to extrapose the V2 clause at LF? In the following, I will argue that this has to do with the presupposition triggered by V2.

To address the above question it is essential to outline basic assumptions about the anchoring of embedded clauses. A matrix clause – in virtue of the features of the finite verb – is temporally and epistemically anchored with respect to the utterance situation and with respect to the speaker. A complement clause is temporally and epistemically anchored with respect to the matrix event and its subject. In this anchoring process, subjunctive mood indicates that the reference event of the embedded Tense projection is bound by the matrix event. In other words, subjunctive mood indicates that the temporal argument of the finite verb is a bound pronoun. Indicative mood, on the other hand, indicates that the temporal argument of the finite verb is a free pronoun and behaves like a discourse anaphor. In German due to the widespread loss of subjunctive mood, the indicative mood has become compatible with both interpretations of the temporal argument and V2 serves to disambiguate these readings. In the following section, the relation between the morphological distinction subjunctive-indicative in Italian and the syntactic distinction between V2- and V-final order that underlies these assumptions will be discussed and illustrated in detail.

Returning to the temporal argument of an embedded verb, if this argument behaves like a discourse anaphor it is in need of or presupposes a discourse

antecedent. Presuppositions of lexical elements are well established in the literature and pertain to elements of the common ground. In the case at hand we deal with the presupposition of a functional element, the temporal argument of the Tense head in the embedded clause. Since functional elements denote syntactic relations, I would like to propose that the presupposition of the embedded Tense head, as a functional category, pertains to a syntactic relation as well. In other words, V2 indicates a presupposition about the syntactic structure, namely that the required discourse antecedent has been established in the syntactic structure preceding the V2-clause. Adjunction of the embedded clause to a high position in the matrix clause thus serves two purposes: a) it brings the embedded clause into a local relation with the matrix force head and b) it brings the embedded clause into the correct precedence relation with respect to the matrix clause that hosts the discourse antecedent of its tense head. In particular, I would like to propose that an extraposed category can be freely ordered with respect to its host clause – since no dominance relation is established in an adjunction configuration. In addition, I assume that the processing of syntactic structure goes from left to right, so that the syntactic presupposition of a V2 clause can only be fullfilled if the adjoined clause is linearized after the matrix host clause, giving rise to extraposition.

In conclusion, the requirement of obligatory extraposition is directly connected to the V2 property of embedded clauses and can thus be extended naturally from V2Rs to V2-adverbials and to V2C-clauses. V2C-clauses cannot be topicalized since they need to be extraposed like V2Rs and V2-adverbials to fullfill the presupposition of embedded V2.

Additional evidence for the proposal that cases of embedded V2 do not involve embedded speech acts is provided by the other distributional properties of these claues. The present account requires that the epistemically anchored (embedded) proposition is licensed by a true assertive operator. This immediately excludes an interrogative or conditional context. Furthermore, we have noted that embedded V2 clauses cannot occur in the scope of negation. This follows from the fact that information that is contrastively negated must be taken to have been already under discussion and be part of the CG, excluding the possibility that this information is part of only the speaker's evidence, as is requested by embedded V2 and has been illustrated in (11b) above. According to our assumptions V2 indicates that the relevant proposition is part of the speaker's evidence only implying that this proposition is not part of the CG, hence the imcompatability of embedded V2 with a contrastively focusing negation, a condition that does not apply to embedded verb final clauses that represent independent speech acts, as illustrated in (16b) above.

7 An alternative analysis of V2Rs

In this section I will first discuss the relation between mood alternations in Italian and the positioning of the finite verb in German. Then I will propose an analysis of V2-relatives as regular subordinated clauses in which the determiner/quantifier due to the extraposition requirement of V2 is interpreted in the embedded clause. The determiner restriction of V2-relatives – remember that only indefinite determiners and weak quantifiers are allowed – is argued to follow from a matching analysis and the site of the merge position of restrictive relative clauses in the account of Cinque (2013).

7.1 Indicative versus Subjunctive and V2

Gärtner (2001, 2002) also noted that relative clauses with an indefinite head noun and the verb in final position allow for the so-called de dicto and de re interpretation, while a V2R allows only for the de re interpretation, as is illustrated in (17).

(17) a. Hans sucht eine Frau, die blaue Augen hat. (de re, de dicto)
Hans looks-for a woman who blue eyes has

b. Hans sucht eine Frau, die hat blaue Augen. (de re, *de dicto)
Hans looks-for a woman who has blue eyes
'John is looking for a woman who has blue eyes.'

As is illustrated in (18), a similar contrast is observable in indicative and subjunctive relative clauses in Italian: while the relative clause marked with subjunctive mood only allows for a *de dicto* interpretation, the relative clause marked with indicative mood, like V2Rs in German, only permits the *de re* reading.

(18) a. Gianni cerca una donna che abbia gli occhi blu. (de dicto)
John looks-for a woman who has.SUB the eyes blue

b. Gianni cerca una donna che ha gli occhi blu. (de re)
John looks-for a woman who has.IND the eyes blue
'John is looking for a woman who has blue eyes.'

The parallelism in interpretation between V2Rs and VfRs in German on the one hand and Ind/Subj-relatives in Italian on the other hand is also corroborated by the fact that the contexts that require Subjunctive in Italian do not admit

V2 in German (also cf. Meinunger 2004: 23). These include relative clauses with a final or a consecutive interpretation, as is illustrated in (19) and (20), respectively.

(19) a. Prendo un autobus che mi porti in centro.
[I] take a bus that me take.SUB to centre

b. Ich nehme einen Bus, der mich ins Zentrum bringt.
I take a bus that me to-the centre takes

c. *Ich nehme einen Bus, der bringt mich ins Zentrum.
I take a bus that takes me to-the centre
'I take a bus that takes me downtown.'

(20) a. È difficile trovare un vestito che lei non possa indossare.
is difficult find a dress that she NEG can.SUB wear

b. Es ist schwierig, ein Kleid zu finden, das ihr nicht steht.
it is difficult a dress to find that her NEG suits

c. *Es ist schwierig, ein Kleid zu finden, das steht ihr nicht.
it is difficult a dress to find that suits her NEG
'It is difficult to find a dress that doesn't suit her.'

Furthermore, we note that the matrix contexts that exclude V2Rs in German, namely clauses containing a negative or interrogative operator require subjunctive mood in the relative clause in Italian, as is illustrated in (21) and (22).

(21) a. Non c'è nessuno che sia meglio di te.
NEG EXIST nobody who is.SUB better than you

b. Es gibt niemanden, der besser ist als du.
EXIST nobody who better is than you

c. *Es gibt niemanden, der ist besser als du.
EXIST nobody who is better than you
'There is nobody who is better than you.'

(22) a. Esiste un vestito che ti piaccia veramente?
EXIST a dress that you pleases.SUB really

b. Gibt es überhaupt ein Kleid, das dir gefällt?
EXIST MOD.PRT a dress that you pleases

c. *Gibt es überhaupt ein Kleid, das gefällt dir?
EXIST MOD.PRT a dress that pleases you
'Is there a dress that you like anyway?'

The data in (19–22) thus show that there is a strong correlation between mood alternations in Italian relative clauses and the positioning of the finite verb in German relative clauses. Mood distinctions in Italian relatives are also connected with information structure (IS), as is briefly discussed in the following section.

7.2 Mood distinctions and IS in Italian relatives

As is indicated by the readings specified in (24), the relative clauses marked with subjunctive and indicative mood in (23ab) differ crucially in which material is mapped into the restriction of the quantifier *few* and which material is mapped into its nuclear scope. The inverted scope reading in (23b) is crucially enforced by putting a focus accent on the adjective in the relative clause in Italian, as is indicated by capital letters in (23b).

(23) a. In quel periodo ho incontrato poche persone che fossero
in that period [I] have met few persons who were.SUB
ricche.
rich

b. In quel periodo ho incontrato poche persone che erano
in that period [I] have met every man who were.IND
RICCHE.
rich
'At that time, I met few people that were rich.'

(24) a. for few people that were rich, it holds that I have met them (reading of (23a))
b. for few people that I encountered, it holds that they were rich (reading of (23b))

In other words, we are dealing with an effect of quantificational variability induced by focus (cf. among many others Herburger 2000) where material that is focussed is mapped onto the nuclear scope, as is illustrated in (25).

(25) a. I know many Swedish Nobel prize winners.
(= for many Swedish Nobel prize winners, it holds that I know them)

b. I know many SWEDISH Nobel prize winners.
(= for many Nobel prize winners that I know, it holds that they are Swedes)

Also this interpretational effect goes into the right direction given that material contained in V2Rs is asserted, rather than presupposed. In the present approach, we can account for this parallel effect by assuming that the extraposition of the relative clause, forced by V2 in German, prevents it from being pied-piped by quantifier raising of the head noun. For Italian, we can assume that a relative clause marked with indicative mood that contains a focused constituent is obligatorily extraposed at LF and thus preventing its material to furnish the restriction of the operator, while subjunctive mood in a relative clause is used to indicate that the relative clause is obligatorily pied-piped by quantifier raising of the head noun.

7.3 The matching analysis of restrictive relative clauses

A crucial ingredient of the present account of V2Rs is the matching analysis of relative clauses that has been put forward by various authors, including Hulsey and Sauerland 2002 and Cinque 2013. Given that idioms and bound pronouns point to the interpretability of the heading NP in the relative clause, as illustrated in (26), restrictive relative clauses seem to call for a raising or matching analysis. We adopt the matching analysis, illustrated in (27), since it can account without any problems for the necessary extraposition of V2Rs and, most importantly, it derives us for free the determiner restrictions on the head noun in V2Rs, as we will see below.

(26) a. John was satisfied by the headway that Mary made.
b. Mary liked the pictures of himself that John sent.

(27) $[_{DP}$ the $[_{NP}$ book$]$ $[_{CP}$ $[_{NP}$ book$]$ $[_{C'}$ that John read t $]]]$ (Hulsey & Sauerland 2002)

The matching analysis combines aspects of the traditional head external analysis employing a relative operator in the relative clause with a raising analysis. As is illustrated in (27), the matching analysis assumes that the NP part of the head noun is base-generated in the relative clause and is then raised to [Spec,CP] to enter into a matching relation with the head noun.

Evidence for this analysis comes from extensive comparative work by Cinque (2013) who argues that finite restrictive relative clauses (and amount relatives) are merged above weak determiners, in Milsark's (1974) sense, that is, above multal

and paucal quantifiers, cardinals, the indefinite determiners and adjectives, and below strong determiners (definite articles, demonstratives, universal quantifiers, etc.) in a single double-headed structure underlying the different types of relative clauses attested cross-linguistically.[1] For Hulsey & Sauerland (2002), matching is a mechanism of ellipsis, that is, a process of phonological deletion under identity. In English and German, it is the occurrence of the NP in the relative clause that is deleted.

Now I would like to make the following proposal. We can derive the correct interpretation of the relative DP in (29a) specified in (29b) and the relevance of the indicative/subjunctive distinction in general, if we assume that the reference of nominals is individualized with respect to situations. Following Kratzer (2007), I assume that situations are parts of worlds that extend over a given time span. That is to say that nominals are analysed as properties, as defined in (28).

(28) An NP that is assigned a value for its situation argument denotes the set of individuals X such that X = {x | x is an N in s}

(29) a. Maria las das Buch das ihr Otto empfahl
b. in s_2 Mary read the unique book x in s_1 such that Otto recommended x to Mary in s_1

In its use as the head of the external NP of a relative clause, the definite determiner denotes the unique individual of type N in the situation denoted by the relative clause as defined in (30).

(30) The definite determiner presupposes that the set X contains exactly one individuum in s and denotes the unique individual that satisfies the nominal predicate in s

The matching mechanism, via identification of the situation arguments of the two occurrences of *book* (x,s), thus guarantees that both NPs denote the same set of objects, licensing the phonological deletion of the lower NP under semantic identity.

1 As evidence, he points out that consistent head-final and consistent head-initial languages show the merge position of such relatives on their sleeves: the order Dem RC Num A N is found in several Caucasian, Cushitic, Dravidian, Tibeto-Burman, Turkic, Uralic (and other OV) languages, while the order N A Num RC Dem is found in several Mon-Khmer, Tai-Kadai, Niger-Congo, Austronesian (and other VO) languages.

This identification of the situation arguments can come about in two ways. The first way consists in the application of a relative operator that binds the situation argument of the verb and of the internal head in the relative clause. However, we do not identify this relative operator with the relative pronoun in (29), as is done in standard accounts.

In our analysis, the relative pronoun is just the spell-out of morphological features of the internal head that are not recoverable after phonological deletion. We assume that the d-morpheme in the so-called relative pronoun in German just serves as host of unrecoverable φ-features but is semantically vacuous (as the definite determiner is in cases of unique and abstract terms like *die Sonne* 'the sun' or *die Liebe* 'the love'). Note that the relative pronoun can be deleted in non-standard varieties, as in Bavarian, under various conditions, illustrated in (32) below. The relative operator, on the other hand, is identified in our analysis with a relative head in the C-domain that λ-abstracts over the situation argument of the verb that has been anchored according to its temporal and modal specifications. This head must thus occupy a high position in the C-domain and blocks V2. We assume that it is spelled-out as *wo* in many Bavarian, Alemannic and Hessian dialects, but remains unrealized in standard German. Following Bayer (1984), we propose the following structure for the relative clause in (29) above.

(31) Maria las das Buch $[_{CP}\ [_{DP}\ [_{NP}\ \sout{\text{Buch}}]\ \text{das}\ ]\ [_{C'}\ (\text{wo})\ [_{IP}\ \text{ihr Otto empfahl}\ t_1\ ]]]$

(32) a. I sog's dem Mo (der) wo im Gartn arwat
I say-it to the man-DAT who-NOM *wo* in the garden works
b. Der Mantel *(den) wo i kaffd hob wor z'rissn
The coat-NOM who-AKK *wo* I bought have was torn
c. Die Lampn (die) wo i geseng hob wor greißlich
The lamp-NOM who-AKK *wo* I seen have was ugly

In other words, the relative clause denotes a set of situations that have been anchored temporally and modally according to the specifications of the embedded verb. Since the subjunctive indicates that the verb is anchored with respect to a situation that is distant from the situation of utterance, that is different from the actual world, and since the indicative indicates that the verb is anchored with respect to a situation that overlaps with the utterance situation, that is, is part of the actual world, an indefinite DP heading a subjunctive relative clause receives a *de dicto* interpretation – since it is interpreted with respect to a situation in w_1 that is remote from the actual world (w_0) – while an indefinite DP heading an indicative relative clause receives a *de re* interpretation – since it is interpreted with respect to a situation in w_0.

Some independent evidence for the present account is provided by the interpretation of adjectives modifying the head noun in restrictive relative clauses. As is illustrated in (33a), the modifier *last* in a complex relative clause can be interpreted in the most deeply embedded clause, as specified in (33b) or in the intermediate embedded clause, as specified in (33c). In the present account, this can be captured by assuming that the situation in *last* (x,s) can be identified either with the event of Peter claiming something or with the event of being written by Grass.

(33) a. Hans las das letzte Buch, das Peter sagte, dass Grass geschrieben hat.
b. John read the last book that Grass had written as Peter said.
c. John read the last book of which Peter said that Grass had written it.

To summarize, a verb final relative clause involves a relative operator that occupies a position in the C-domain blocking V2 and binds the situation argument of the verb that has been temporally and modally anchored by its finite morphology. In the following section, I will outline how the matching mechanism works in V2Rs.

7.4 The matching mechanism in V2Rs

Note that matching is also satisfied if the situation argument of the internal head is (accidentally) assigned the same value as the situation argument of the external head has been. Since the relative clause is obligatorily extraposed and the main clause is processed before the relative clause (as assumed above), a discourse antecedent is established, namely the situation denoted by the matrix clause, before the relative clause is processed. If the internal NP is assigned this antecedent as the value of its situation argument, the two occurrences match and the internal head can be deleted, as is illustrated in (34). (34a) displays the base structure with the relative clause contained in the DP of the head noun. (34b) displays the clause at PF with the lower occurrence of NP being deleted.

(34) Apfeldorf hat viele Häuser, die stehen leer.
a. [$_{CP}$Apfeldorf hat [$_{DP}$[$_{NP}$viele Häuser] [$_{CP}$ [$_{DP}$[$_{NP}$ viele Häuser] die] [$_{C}$ stehen [$_{IP}$leer]]]]]
b. [$_{CP}$Apfeldorf hat [$_{DP}$[$_{NP}$viele Häuser] [$_{CP}$ [$_{DP}$[$_{NP}$ ~~viele Häuser~~] die] [$_{C}$ stehen [$_{IP}$leer]]]]]
c. [$_{CP}$Apfeldorf hat [$_{DP}$[$_{NP}$~~viele~~ Häuser]] [$_{CP}$ [$_{DP}$[$_{NP}$ viele Häuser] die] [$_{C}$ stehen [$_{IP}$leer]]]]

The crucial point is now its representation at LF, displayed in (34c). After extraposition of the relative clause, the quantifier *viele* cannot be interpreted in the matrix clause, since this would leave us with unbound variables. Instead it is interpreted in the embedded clause indicated by crossing out of the quantifier in the higher position at LF. In this case, there is no relative operator in the C-domain and the finite verb may be moved into the C-domain. The relative pronoun, in this case, cannot be deleted, since its morphological features are necessary to identify the discourse antecedent.

This analysis now leads to the welcome result that the determiner restriction on the external head in V2Rs follows from the merge position of the relative clause and the assumption that these determiners are interpreted in the relative clause. Remember that only weak determiners can be assumed to be part of the internal head in Cinque's (2013) matching account.

Summing up, we arrive at the following conclusions. Both V2Rs and V2-adverbials are embedded clauses. They have an assertive potential (indicated by V2) but lack independent assertive force. This condition explains the contexts in which V2Rs and V2-adverbials may occur: since they need to enter into a local relation with an assertive Force-head, they cannot occur in a conditional or interrogative context. Furthermore, they cannot occur in the scope of a negative operator, since in German material that follows sentential negation is contrastively focused presupposing that it is already part of the CG between speaker and hearer. Since V2 indicates that only the speaker is in possession of evidence for claiming the respective proposition this is ruled out. Moreover, we have proposed that the licensing of the assertive potential requires extraposition of the relative clause to a high position in the main clause. In this scenario, the determiner restriction follows from the latter condition in the matching analysis of Cinque (2013). In conclusion, we have provided an account that explains why the first two distributional properties of V2Rs described by Gärtner (2001, 2002) also obtain for V2-adverbials and V2C-clauses and also derives the other conditions on V2Rs – the determiner restriction and the restriction on D-pronouns – in a natural way. The determiner restriction follows from the base structure of restrictive relative clauses and the restriction on D-pronouns follows from the fact that only D-pronouns can pick up a discourse antecedent in German and can be semantically vacuous.

8 Consequences

In this short final section, I will briefly discuss an important consequence of the unified analysis of the diverse cases of embedded V2. If this account is on the

right track, speech act-related adverbial clauses, as discussed in detail by Frey (2016) require a different analysis in the present account. They must be assumed to be adjoined to ForceP since they express relations between speech acts. V2 in these clauses can then not be assumed to be licensed by the matrix speech act for shere lack of c-command (the adjoined clause is too high in a position).

Is there any evidence for this analysis? At this point, it is interesting to note that these adverbial clauses are also *licensed* by – can be combined with – other speech acts, as is illustrated in (35ab) taken from Frey 2016). Furthermore, note that this type of V2 clauses can also (marginally) precede the main clause and are not subject to the extraposition requirement, illustrated in (35cde), indicating that they present a completely separate and independent speech act.

(35) a. Hast du den Artikel von Hans gelesen? weil ich finde den sehr gut
b. Lies mal den Artikel von Hans! weil ich finde den sehr gut
c. Kommt Maria zur Party? weil du organisierst doch die ganze Sache
d. weil du organisierst doch die ganze Sache, kommt Maria eigentlich zur Party?
e. weil du organisierst doch die ganze Sache, wann findet die Party statt?

For cases like (35) it must be assumed that the relevant V2 clause has the structure of a main clause and *weil* constitutes a discourse particle. I will leave this issue for future research. To conclude, we have seen in this paper that a certain type of focus (contrastive focus, scalar focus) contained in an embedded domain (cf. the examples in (15) and (16) above) requires a separate local assertion, while new information focus does not, but licenses a subclass of modal particles in an embedded domain. V2 serves to indicate that the embedded clause has assertive potential which is licensed by adjunction to the C-domain of the main clause explaining the distributional properties of cases of embedded V2 (in the case of V2-adverbials restricted to cases representing propositional relations).

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Joachim Jacobs

What kind of main clause phenomenon is V2 in German?

Abstract: The paper shows that the distribution of V2 word order in subordinated clauses differs from the distribution of other types of main clause phenomena in German. Under the theoretical premises of Jacobs (2018), the differences lead to the conclusion that the traditional assumption that V2 clauses have assertional sentence mood cannot be upheld. Four alternatives to this assumption are discussed: assertional proto-force, Main Point of Utterance, truth judgment, local licensing. I argue that the first three alternatives have empirical or theoretical problems that can be avoided if we adopt the fourth.[1]

1 Introduction

V2 word order[2] is a main clause phenomenon (MCP) in German, which means that it has only limited potential to occur in subordinated clauses.[3] This holds for both V2 declarative and V2 interrogative clauses, but in the present paper I will concentrate on the former, more precisely, on V2 in combination with a [-w] prefield, [V2,-w] for short. Very roughly, the use of [V2,-w] clauses as an alternative to VL clauses in subordinated positions of German sentences is possible only in the following cases[4]:

After certain verbs of saying or thinking, e.g.:

(1) Paul sagt/denkt/hofft, [$_{[V2,-w]}$ es wird bald regnen].
'Paul says/thinks/hopes that it will rain soon'

1 I thank Josef Bayer and Constantin Freitag for helpful comments.

2 V2, V1, VL: finite verb in second, first, and last position, respectively.

3 For V2 as an MCP of Germanic languages, see Heycock (2006: Kap. 5), Aelbrecht et al. (2012b), Holmberg (2013).

4 See also Reis (1997), Freywald (2013).

Joachim Jacobs, University of Wuppertal

https://doi.org/10.1515/9781501508141-006

After certain verbs of perception, e.g.:

(2) Ich sehe/höre, [$_{[V2,-w]}$ Paul will abreisen].
'I see/hear that Paul wants to leave'

After certain verbal predicates expressing a wish, e.g.:

(3) Ich wünschte, [$_{[V2,-w]}$ Paul würde bald abreisen].
'I wish Paul left soon'

After certain verbal predicates expressing a preference, e.g.:

(4) Es wäre besser, [$_{[V2,-w]}$ Paul würde bald abreisen].
'It would be better if Paul left soon'

After certain nouns of saying, thinking or wishing, e.g.:

(5) die Behauptung/die Hoffnung/der Wunsch, [$_{[V2,-w]}$ Paul würde bald abreisen]
'the claim/hope/whish that Paul would leave soon'

In certain conditional or relative clauses, e.g.:

(6) Vorausgesetzt, [$_{[V2,-w]}$ du kommst rechtzeitig], kriegst du sicher ein Ticket,
'You will surely get a ticket, provided you will be there in time'

(7) Er hat ein Auto, [$_{[V2,-w]}$ das ist mehr als zwanzig Jahre alt].
'He has a car which is more than twenty years old'

After certain verbal predicates expressing certainty, e.g.:

(8) Es ist klar/steht fest, [$_{[V2,-w]}$ Paul will abreisen].
'It is clear/certain that Paul wants to leave'

After certain introductory phrases, e.g.:

(9) Es ist einfach so/Die Sache ist, [$_{[V2,-w]}$ ich habe keine Zeit zu warten].
It is simply the case/The point is that I don't have time to wait'

In all other types of subordinated clauses [V2,-w] is not possible, for example:
In most types of complement clauses, e.g.:

(10) Paul bezweifelt/erwartet, [$_{VL}$ dass er bald entlassen wird]/
*[$_{[V2,-w]}$ er wird bald entlassen].
'Paul doubts/expects that he will be fired soon'

(11) Es trifft zu/es ist wahrscheinlich, [$_{VL}$ dass es bald regnet]/*[$_{[V2,-w]}$ es regnet bald].
'It is true/it is likely that it will rain soon'

(12) Ich würde mich freuen/wäre überrascht, [$_{VL}$ wenn es bald regnen würde]/
*[$_{[V2,-w]}$ es würde bald regnen].
'I would be pleased/surprised if it would rain soon'

In most types of relative clauses, e.g.:

(13) Das Auto, [$_{VL}$ das mehr als zwanzig Jahre alt ist]/*[$_{[V2,-w]}$ das ist mehr als zwanzig Jahre alt], wird noch benützt.
'The car, which is more than twenty years old, is still in use'

(14) Sie wohnt immer noch, [$_{VL}$ wo sie geboren ist]/*[$_{[V2,-w]}$ wo sie ist geboren].
'She still lives where she was born'

In adverbial clauses, e.g.:

(15) Paul kam, [$_{VL}$als die Party schon vorbei war]/*[$_{[V2,-w]}$ als die Party war schon vorbei].
'Paul came when the party was already over'

(16) Paul besitzt kein Auto, [$_{VL}$ da er behindert ist]/*[$_{[V2,-w]}$ da er ist behindert].
'Paul doesn't own a car, because he is disabled'

(17) [$_{VL}$ Wenn du rechtzeitig kommst]/*[$_{[V2,-w]}$ wenn du kommst rechtzeitig], kriegst du sicher ein Ticket,
'You will surely get a ticket if you will be there in time'

And even some of the matrix predicates listed in (1) – (9) disallow [V2,-w] complements in certain contexts, e.g. when they are in the scope of negation or of a question:

(18) Ich denke nicht, [$_{VL}$ dass es bald regnen wird]/*[$_{[V2,-w]}$ es wird bald regnen].
'I don't think it will rain soon'

(19) Steht es fest, [$_{VL}$ dass Paul abreisen will]/*[$_{[V2,-w]}$ Paul will abreisen]?
'Is it certain that Paul wants to leave?'

So there can be no doubt that [V2,-w] is an MCP, i.e. that its use in subordinated clauses is subject to many restrictions. But MCP do not form a homogenous class in German (nor do they in other languages). So the question arises *what kind of MCP* is [V2,-w] in German. To answer this question, Sec. 2 compares the distribution of [V2,-w] with the distribution of other MCP in subordinated clauses of German. The comparison will be couched in the theory of MCP proposed in Jacobs (2018), which starts from a distinction between three kinds of MCP: MCP-I are possible in some, but not in all subordinated clauses, MCP-II are less restricted than MCP-I, and MCP-III are more restricted than MCP-I/-II.

Sections 2.1–2.3 first outline the conditions that govern the occurrence of MCP-I, MCP-II and MCP-III, respectively, and then, in the perspective of these conditions, compare their distribution with the distribution of [V2,-w]. For MCP-I, e.g. the discourse particle *ja*, roughly 'as you know', and MCP-II, e.g. the speaker-oriented adverb *sicherlich* 'certainly', the relevant conditions are rooted in the fact that MCP-I/-II have expressive meanings. They require these meanings to fit the context, thereby excluding them from subordinated clauses in non-fitting contexts. Typical MCP-III, e.g. V1 order in questions, are banned from many subordinated positions because they are formal markers of sentence mood constructions, which normally resist embedding.

The empirical result of the comparison will be that [V2,-w] differs from each of these types of MCP w.r.t. the distribution in subordinated clauses. This leads to the theoretical conclusion that the conditions that determine the distribution of MCP-I, MCP-II and MCP-III in subordinated clauses do not hold for [V2,-w] (with the possible exception of a subtype of [V2,-w] clauses that will be discussed in Section 4, cf. below). For example, the fact that subordinated [V2,-w] clauses, in contrast to MCP-I like *ja*, are not excluded from non-veridical contexts, cf. 2.1, shows that [V2,-w] is not a veridical element, i.e. an element which signals the speaker assumption that the proposition of the clause is true and therefore has to avoid non-veridical contexts in order to stay in harmony with the linguistic environment. And the fact that [V2,-w] clauses are possible in many types of subordinated positions that exclude MCP-III, e.g. in indirect speech, cf. 2.3, shows

that [V2,-w] is not a formal marker of a sentence mood construction (at least not generally, cf. below).

I will argue that these theoretical results imply that [V2,-w] does not signal assertional sentence mood. This conclusion contradicts the traditional classification of [V2,-w] clauses as assertional sentences ('Aussagesätze'). It does not, however, force us to deny that [V2,-w] clauses are often used to perform assertions. In the theoretical framework of Jacobs (2018), this can be explained by a purely pragmatic assignment of illocutions to utterances of [V2,-w] clauses, which predicts that they can be, but need not be, assertions, cf. 2.1.2. Independent evidence for a flexible determination of the illocutionary force of [V2,-w] clauses comes from their extraordinary large illocutionary potential.

While it has often been overlooked that the distribution of [V2,-w] differs from the distribution of other MCP in German, the fact that certain cases of [V2,-w] in subordinated clauses pose a problem for the assumption that [V2,-w] is grammatically associated with assertion has not gone unnoticed. Sec. 3 discusses some recent alternatives to this assumption. According to them, [V2,-w] clauses only express a weak form of assertion, assertional proto-force, cf. 3.1, or have to convey only the most important part of an assertion, the Main Point of Utterance, cf. 3.2, or aren't directly connected with assertion at all, but signal a truth judgment, cf. 3.3. I will show that all these approaches have empirical or theoretical problems, often having to do with differences between [V2,-w] and other MCP. As a fourth theoretical alternative, I discuss the idea that the restricted use of [V2,-w] clauses in subordinated positions reflects that they have to be licensed by the local grammatical environment of these positions, cf. 3.4. An analysis based on this idea can capture idiosyncrasies as well as commonalities of different cases of subordinated [V2,-w] clauses, but doesn't have to postulate a stable interpretive effect of [V2,-w] and thus avoids many problems of other approaches. The question whether [V2,-w] clauses can be used as illocutions, e.g. as assertions, can be delegated to the pragmatic theory sketched in 2.1.2.

The paper closes with some conjectures on [V2,-w] clauses with non-neutral syntax, i.e. with an arrangement of constituents that signals a specific information structure, cf. Sec. 4. Subordination of such clauses seems to be more restricted than subordination of neutral [V2,-w] clauses. Non-neutral syntax in [V2,-w] clauses may therefore be an MCP-III, which, under the premises of the analysis in 2.3, would indicate that it marks unembeddable constructions. Whether this can be substantiated must be left for future research.

A caveat: I will only consider standard present-day German. Therefore I will ignore, among other things, the sporadic use of [V2,-w] in *dass*-clauses, cf. Freywald (2009), which hasn't reached the status of a standard construction yet.

2 A theoretically informed comparison of [V2,-w] with other main clause phenomena of German

To answer the question in the title of this paper, I will now compare [V2,-w] with other MCP of German. The comparison will be based on the theory of MCP in German proposed in Jacobs (2018), which starts from a pre-theoretical distinction of three kinds of MCP. For each of these kinds of MCP, the following sections first present a theoretical account of the restrictions on their use in subordinated positions, then, in the perspective of this account, compare this distribution with the distribution of subordinated [V2,-w] clauses, and finally draw theoretical conclusions from this comparison. As already announced in Sec. 1, the main conclusion will be that [V2,-w] is essentially different from each of the other kinds of MCP, which further implies that [V2,-w] cannot be a marker of assertional sentence mood.

Turning now to the different kinds of MCP in German, all of them are possible in non-subordinated clauses, i.e. in independent clauses and in clauses that are paratactically linked to, but not subordinated to, other clauses, e.g. V2 clauses introduced by *denn* 'because'. Furthermore, MCP can occur in all clause types when they are verbatimly quoted. Many differences, however, exist in regard to non-quotational uses of MCP in subordinated clauses. Three main types can be distinguished pre-theoretically:

(i) MCP-I are possible in some, but not in all subordinated clauses.
(ii) MCP-II are possible in a broader range of subordinated clauses.
(iii) MCP-III are excluded from all subordinated clauses.

(20) – (22) present some typical instances of these types of MCP. For each phenomenon, example a. illustrates its use in non-subordinated clauses, b. shows that it is excluded from certain subordinated clauses, c. demonstrates that it can occur in other subordinated clauses, except when it is an MCP-III. The c-example of MCP-II also illustrates the contrast to MCP-I[5]:

MCP-I
Examples: the discourse particles *ja* and *doch*,[6] the discourse-oriented adverbial *offen gesagt* 'frankly':

5 For many more examples of the three classes of MCP, see Jacobs (2018).
6 When discussing discourse particles, I always refer to their unstressable variants: Unstressable *ja* indicates that the clause describes a fact that might already be known to the addressee, cf. Kratzer (1999) and 2.1.1 below. Unstressable *doch* expresses that the clause describes an established fact that is in conflict with a salient assumption, cf. Grosz (2014). The stressable variants of *ja* and *doch* are semantically different, cf. Jacobs (to appear), and will be ignored here.

(20) a. Paul ist ja/doch/offen gesagt nicht promoviert.
'Paul *ja*/*doch*/frankly doesn't have a doctor's degree'
b. Falls Paul *ja/*doch/*offen gesagt nicht promoviert ist, wird er die Stelle nicht bekommen.
'In case Paul *ja*/*doch*/frankly doesn't have a doctor's degree he will not get the job'
c. Paul hat sich noch nicht klar gemacht, dass er für die Stelle ja/?doch/offen gesagt gar nicht geeignet ist.
'Paul didn't realize yet that he *ja*/*doch*/frankly is not suited for the job'

MCP-II
Examples: the evaluative/epistemic adverbs *leider* 'unfortunately' and *sicherlich* 'certainly', the discourse particle *wohl*, roughly 'presumably'[7]:

(21) a. Paul wird leider/sicherlich/wohl zu spät kommen.
'Paul will unfortunately/certainly/*wohl* be late.'
b. Es ist unwahrscheinlich, dass Paul *leider/*sicherlich/*wohl zu spät kommt.
'It is unlikely that Paul will unfortunately/certainly/*wohl* be late'
c. Es stimmt, dass Paul leider/sicherlich/wohl/??offen gesagt zu spät kommt.
'It is true that Paul will unfortunately/certainly/*wohl*/frankly be late '

MCP-III
Example: V1/V2 word order in many types of clauses (but not in [V2,-w] clauses, see 2.3), e.g. V1 in polar questions:

(22) a. [$_{V1}$ Wird er pünktlich kommen?]
'Will he be in time?'
b. Es ist fraglich, [$_{VL}$ ob er pünktlich kommen wird]/*[$_{V1}$ wird er pünktlich kommen].
'It is questionable whether he will be in time'

2.1 MCP-I

Jacobs (2018) argues that the restrictions on the use of MCP-I in subordinated clauses of German reflect three semantic/pragmatic conditions on the contexts of these MCP: HARMONY, ANTI-RESTRICTIVITY, and ANTI-ACTIVATION. For

7 For *woh*l, see Zimmermann (2004).

example, the fact that *ja* isn't possible in the conditional clause in (20b) is analyzed as resulting from a violation of HARMONY and ANTI-RESTRICTIVITY. When none of the relevant conditions are violated, as in the complement clause in (20c), there is nothing that blocks MCP-I, provided their individual lexical requirements are met.[8] This mode of explanation differs sharply from explanations based on the idea that MCP have to be licensed by an illocutionary element in the structure of the clause, e.g. by a Force head.[9] In the following sections, I will give a short sketch of the first two of the above-mentioned conditions. A detailed presentation can be found in Jacobs (2018: sec. 4) and, additionally for the second condition, in Jacobs (2017). The third condition, ANTI-ACTIVATION, can be ignored here.[10]

2.1.1 Conditions on the contexts of MCP-I

The context conditions reflect the status of MCP-I as elements of linguistic form that contribute *expressive meanings*, i.e. assumptions, intentions, evaluations or emotions of the speaker, to the use-conditional (as opposed to the descriptive) level of the grammatical meaning of clauses, see Potts (2005), Gutzmann (2015). Consider, for example, the discourse particle *ja* in (23):

(23) Paul ist ja durchgefallen.
'Paul *ja* failed the exam'

(23-m) descr: FAILED-THE-EXAM(PAUL)
use-c: JA(FAILED-THE-EXAM(PAUL))

(23-m) is an informal representation of the grammatical meaning of (23), i.e. of the components of meaning of (23) that are fixed by linguistic conventions and therefore present in all licit uses of (23). Descriptive and use-conditional aspects are specified on separate lines. The particle is analyzed as contributing a speaker assumption about the descriptive content to the use-conditions of (23), viz. the assumption spelled out in the meaning rule MR1, adopted from Kratzer (1999):

8 For more detailed information on which MCP-I are subject to which context conditions, cf. Jacobs (2018: 4.4.2).

9 For problems of this idea, cf. Jacobs (2018: 3.2).

10 ANTI-ACTIVATION keeps MCP-I away from propositions that are under discussion in the temporal proximity of the utterance, thereby preventing pragmatically irrelevant uses of MCP-I, as for example in (21c), cf. Jacobs (2018: 4.2.3). Inclusion of this condition into our comparison of MCP-I with [V2,-w] would not change the general picture.

MR1 JA(p) iff the speaker assumes (a) & (b):
(a) p is true;
(b) the addressee might know that p is true.

MR1 illustrates a characteristic property of MCP-I that distinguishes them from other expressive elements. The speaker attitudes they add to the grammatical meaning of a clause at least partly concern the addressee and are such that by communicating them the speaker can help the addressee to determine the discourse role of utterances of the clause, in the case of *ja*, for example, their role as a reminder (e.g. *Chopin wurde ja in Polen geboren*, 'Chopin was born in Poland, as you know').

2.1.1.1 Harmony

In the following presentation of the context conditions I will continue to mainly use *ja* as an example. The first condition, however, holds for expressive meanings in general:

HARMONY
If the use of a clause S conveys a speaker attitude att, the context of S in this use must not indicate absence of att.

This principle explains, among other things, why most MCP-I, including *ja*, cannot occur in non-veridical contexts. Consider (24) – (25):

(24) Ich glaube nicht, dass Paul *ja schon promoviert ist.
'I don't believe that Paul *ja* already has a doctor's degree'

(25) Ich hoffe, dass Paul *ja schon promoviert ist.
'I hope that Paul *ja* already has a doctor's degree'

Due to the presence of *ja* in the clause *dass Paul ja schon promoviert ist*, all licit uses of this clause convey the speaker assumption that Paul already has a doctor's degree, see MR1 (a). But in (24), the matrix predicate *ich glaube nicht* 'I don't believe' indicates absence of this assumption. This leads to a violation of HARMONY. The same thing happens in (25): *Ja* expresses that the speaker assumes that Paul already has a doctor's degree, but the matrix verb *hoffen* 'hope' signals that the speaker is not sure whether this is the case.

Effects of HARMONY can also be observed in cases of reported speech[11]:

11 (26) adopted from Kwon (2005).

(26) Die FIFA wies darauf hin, dass der Spruch ja nicht in allen Verbänden Anwendung findet.
'FIFA pointed out that the decision will *ja* not apply to all soccer associations'

In the most likely reading of (26), the interpretation of *ja* is shifted from the context of the utterance to the context described in the matrix clause,[12] and the attitude expressed by *ja* is ascribed to the semantic subject of the matrix clause. Consequently, HARMONY is checked with regard to the matrix subject and requires a matrix predicate that doesn't indicate absence of this attitude in the subject. This excludes matrix predicates that imply that the subject does not assume that the proposition of the complement clause is true. Thus, while a shifted interpretation is possible under verbs like *auf etwas hinweisen* 'point out', as in (26), it is normally excluded under, for example, *bestreiten* 'deny':

(27) Die FIFA bestreitet, dass die Entscheidung *ja überall Anwendung findet.
'FIFA denies that the decision *ja* applies everywhere'

2.1.1.2 Anti-restrictivity

The second context condition only holds for certain addressee-oriented speaker attitudes. What these attitudes are is discussed in Jacobs (2018: Sec. 5), Jacobs (2017). For the present purpose it suffices to say that they include the attitudes contributed by most MCP-I, e.g. by the discourse particles *ja* and *doch*[13]:

ANTI-RESTRICTIVITY
For certain addressee-oriented speaker attitudes att expressed by the use of a clause S: If att operates on a proposition p in this use of S, p must not serve as the basis for a property λα[p] that restricts a g-referring element in S.

A g-referring element is a part of semantic structure that determines the discourse referent(s) to which the predicate of the clause applies. "g" for 'generalized' indicates that the notion is intended to cover not only elements that refer in the usual sense but also quantifiers, i.e. parts of semantic structure that determine a domain of discourse referents and specify to which of its elements the predicate applies. A property restricts a g-referring element if it narrows down the discourse-referents determined by this element to referents that have the property.

12 See Döring (2013) for shifted interpretations of German discourse particles.
13 The following version of the condition differs slightly from the one presented in Jacobs (2018), for reasons that are discussed in Jacobs (2017).

ANTI-RESTRICTIVITY excludes the relevant MCP-I from many types of restrictive relative clauses:

(28) Die Stelle bekam derjenige Bewerber, der ??ja/*doch promoviert ist.
'The job was given to the applicant that *ja*/*doch* has a doctor's degree'

The relative clause in (28) denotes the proposition 'x has a doctor's degree', which serves as the basis for the property λx[x has a doctor's degree] that restricts the g-referring element 'the applicant'. ANTI-RESTRICTIVITY therefore prohibits the speaker attitudes expressed by *ja* or *doch* from operating on 'x has doctor's degree' and thus correctly predicts that these MCP-I cannot be added to the relative clause.

ANTI-RESTRICTIVITY also covers restrictions on MCP-I in various types of adverbial clauses:

(29) Uns geht meistens das Trinkwasser aus, wenn es *ja/*doch nicht regnet.
'Most of the time, we run out of drinking water if it *ja*/*doch* doesn't rain'

(30) Paul kam, als die Party ??ja/??doch schon vorbei war.
'P. came when the party was *ja*/*doch* already over'.

Under Kratzer's (2012) analysis, the proposition expressed by the conditional clause in (29) serves as the basis of a property that restricts the domain of the quantifier *meistens* 'most of the time' which binds the event-argument in the apodosis. ANTI-RESTRICTIVITY correctly rules out insertion of *ja* or *doch*.

The temporal clause in (30) has the semantic role of a free relative that restricts the implicit argument representing the time of the matrix event, roughly as in the paraphrase 'Paul came at the time at which the party was over'.[14] ANTI-RESTRICTIVITY explains why *ja* and *doch* are excluded.

ANTI-RESTRICTIVITY does not prevent the relevant MCP-I from occurring in appositive or continuative relative clauses, nor in non-restrictive uses of conditional or temporal clauses. Indeed, MCP-I in such clauses are well attested. ANTI-RESTRICTIVITY even correctly allows the relevant MCP-I to occur in non-appositive and non-continuative relative clauses, provided they do not restrict a g-referring element[15]:

14 This paraphrase is inspired by Hall's and Caponigro's (2010) analysis of the English counterparts of *als*-clauses.
15 (31) from www.welt.de.

(31) Das sind Leute, die ja selbst positiv waren.
'These are people who were *ja* positively tested (for doping) themselves'

Under standard analyses of the semantic structure of (31), the noun *Leute* 'people' that is modified by the relative clause here is not a g-referring element, i.e. an element that provides a discourse-referent for the predicate of the clause. It rather functions as a predicate itself, which is further modified by the relative clause and applied to the referent of *das*.

2.1.2 The relation of MCP-I to illocutions

Since Hooper & Thompson (1973), many researchers have observed that there are close connections between typical MCP on the one hand and illocutions on the other.[16] In Jacobs (2018), I argue that the reason for these connections is that by performing illocutionary acts, speakers express meanings of the same kind as MCP-I, viz. addressee-oriented speaker attitudes.[17] More precisely, illocutionary acts are utterances by which the speaker expresses an *illocutionary intention*, e.g. an assertional intention, like (32a) or (32b), or a directive intention, like (32c):

(32) a. INFORM(p): speaker wants the utterance to cause addressee to add p to the set of propositions s/he believes to be true.
b. REMIND(p): speaker wants the utterance to cause addressee to remember that p is in the set of propositions s/he believes to be true.
c. ORDER(p): speaker wants the utterance to cause addressee to be obliged to do p.

I assume that clauses are associated with such intentions in their utterance meanings. The utterance meaning of a clause S in a situation sit, S-m^{sit}, results from fleshing out the grammatical meaning S-m to adapt it to sit.[18] For example, (23) above can have the utterance meaning (23-m^{sit1}) in a situation sit1 in which the speaker uses *ja* to indicate that s/he wants to remind the addressee of the fact described in this sentence:

16 For discussion, see Heycock (2006) and several papers in Aelbrecht et al. (2012a).
17 For details, see Jacobs (2018: 4.3).
18 Roughly, S-m^{sit} differs from S-m in two aspects: a) Free variables in S-m are resolved in accordance with sit and b) S-m is adapted to sit by certain additions or modifications, e.g. by 'free enrichment' (Recanati 2004).

(23) Paul ist ja durchgefallen.
'Paul *ja* failed the exam'

(23-m^{sit1}) descr: FAILED-THE-EXAM(PAUL)
use-c: JA(FAILED-THE-EXAM(PAUL)) &
REMIND(FAILED-THE-EXAM(PAUL))

I hypothesize that the assignment of illocutionary intentions to utterance meanings is governed by the following principle:

P1 For all clauses S and utterance situations sit: Iff there is at least one suitable illocutionary intention, the use-conditional level of S-m^{sit} contains such an intention. An illocutionary intention is suitable iff it is compatible with sit, with the descriptive content and the rest of the use-conditional content of S-m^{sit}, as well as with all relevant constraints

In short, utterance meanings of clauses contain a suitable illocutionary intention *by default*.[19] I presume that this also holds for subordinated clauses.

These assumptions account for the following connections between MCP-I and illocutions, all of them empirically well established but not necessarily well understood:

(i) *Clauses that cannot host MCP-I are not used as illocutionary acts.* Illocutionary intentions are meanings of the same kind as MCP-I, viz. addressee-oriented speaker attitudes, cf. above. Therefore, the context conditions that restrict the use of such meanings, e.g. HARMONY, also restrict the assignment of illocutionary intentions. For example, HARMONY excludes intentions that imply that the speaker assumes p, i.e. assertional intentions like INFORM or REMIND (see also 2.1.3.2 below), from contexts that indicate absence of this assumption, parallel to many MCP-I. Consequently, P1 will not assign an assertional intention to the utterance meaning of a clause in such a context, for P1 only assigns intentions that are compatible with all relevant constraints, including HARMONY. That is why, for example, the subordinated clauses in (24) and (25) above not only disallow MCP-I like *ja* but are also not used to express an assertional illocutionary intention of the speaker.

Moreover, illocutionary intentions are subject to ANTI-RESTRICTIVITY and therefore excluded from most types of restrictive relative or adverbial clauses, again parallel to many MCP-I. Indeed, it has often been noted that speakers do not perform illocutionary acts in uttering such clauses.

19 This idea resembles Truckenbrodt's (2006) 'root rule'.

(ii) *Utterances of clauses that allow MCP-I are often illocutionary acts.* The context conditions on illocutionary intentions are largely identical to those on MCP-I meanings, cf. (i), so they will frequently be met by utterances of clauses that allow MCP-I meanings. Moreover, for many of these utterances, there will be at least one suitable illocutionary intention in the sense of P1. So nothing will prevent the assignment of one of these intentions to the meaning of such utterances. (Remember that P1 implies that utterance meanings of clauses contain a suitable illocutionary intention whenever possible.) This explains, for example, why appositive or continuative relative clauses not only allow MCP-I but are also normally used to express an assertional illocutionary intention.[20] There simply is no reason why they shouldn't.

(iii) *MCP-I and sentence mood mutually restrict each other*. P1 licenses assignment of an illocutionary intention only if the intention is compatible with all other elements of the use-conditional content of the utterance. Therefore, an illocutionary intention chosen to satisfy P1 must not conflict with MCP-I meanings, and vice versa. This can lead to the exclusion of specific MCP-I from a clause type if the choice of illocutionary intentions for this clause type is restricted by a *sentence mood*, i.e. by a component of grammatical meaning that pre-specifies the type of intentions that can be assigned pragmatically via P1 and requires that all licit utterances express an intention of this specific type. In our framework, a sentence mood can be represented by a sortally restricted variable for illocutionary intentions, as in the following representation of the directive sentence mood of imperative clauses:

(33) Hol Gerda vom Bahnhof ab!
'Pick up Gerda from the station!'

(33-m) descr: PICK-UP-FROM-THE-STATION(GERDA)(addressee)
use-c: dir(PICK-UP-FROM-THE-STATION(GERDA)(addressee))

"dir" is a variable for directive intentions (ORDER, PERMIT etc.). As a free variable, it must get a sortally fitting value, i.e. a directive intention, in utterance meanings corresponding to the grammatical meaning. This value assignment simultaneously satisfies P1, provided the chosen intention is suitable in the sense of P1.

20 See Holler (2013).

(33-m) captures the fact that utterances of (33) that comply to the grammatical meaning of the sentence always express a directive intention, in contrast to utterances of clause types which don't have a sentence mood, i.e. don't prespecify a type of illocutionary intentions and hence can be used with a larger range of illocutionary intentions and even without an illocutionary intention. As we will see in 2.1.3.2, this holds for [V2,-w] clauses.

This mode of representing sentence mood explains, for example, why veridical MCP-I are excluded from clauses with directive sentence mood:

(34) Hol Gerda *ja vom Bahnhof ab!

(34-m) descr: PICK-UP-FROM-THE-STATION(GERDA)(addressee)
use-c: dir(PICK-UP-FROM-THE-STATION(GERDA)(adressee)) &
JA(PICK-UP-FROM-THE-STATION(GERDA)(addressee))

All possible values of "dir" conflict with JA, because directive intentions generally imply that the speaker thinks that p is not yet true, whereas JA signals that s/he assumes p to be true.[21]

2.1.3 Comparison of MCP-I and [V2,-w]

On the basis of this theory of MCP-I, I will now compare MCP-I and [V2,-w]. First I will have a look on the distribution of the two phenomena in subordinated positions, then I will draw some theoretical conclusions concerning the conditions that govern the occurrence of subordinated [V2,-w] clauses.

2.1.3.1 Distribution in subordinated clauses

As we would expect from the fact that both MCP-I and [V2,-w] are main clause phenomena, there are several types of subordinated clauses which neither allow MCP-I nor [V2,-w], for example:

Complement clauses of certain matrix predicates, e.g.:

(35) Er bezweifelt/erwartet, [$_{VL}$ dass Paul das Examen *ja bestanden hat]/
*[$_{[V2,-w]}$ Paul hat das Examen bestanden].
'He doubts/expects that Paul (*ja*) failed the exam'

21 There is a stressable variant of *ja* whose meaning is in harmony with directive intentions (it adds emphasis to the intentions) and which is therefore possible in imperatives, cf. Thurmair 1989: 2.2.1.2, Jacobs (to appear).

Most types of restrictive relative clauses, e.g.:

(36) Die Stelle bekam derjenige Bewerber, [$_{VL}$ der ??ja promoviert ist]/
*[$_{[V2,-w]}$ der ist promoviert]
'The job was given to the applicant that (*ja*) has a doctor's degree'

Most types of restrictive adverbial clauses:

(37) Uns geht meistens das Trinkwasser aus, [$_{VL}$ wenn es *ja nicht regnet]/
*[$_{[V2,-w]}$ wenn es regnet nicht].
'Most of the time, we run out of drinking water if it (*ja*) doesn't rain'

(38) Paul kam, [$_{VL}$ als die Party ??ja schon vorbei war]/*[$_{[V2,-w]}$ als die Party war schon vorbei].
'P. came when the party was (*ja*) already over'

Also not unexpectedly, some types of subordinated clauses allow both [V2,-w] and MCP-I, for example:

Complement clauses of certain verbs of saying, e.g.:

(39) Paul sagt, [$_{[V2,-w]}$ es würde ja keiner merken, dass er Alkoholiker ist].
'Paul says no one would *ja* notice that he is an alcoholic'

Complement clauses of certain verbs of thinking, e.g.:

(40) Paul denkt, [$_{[V2,-w]}$ es würde ja keiner merken, dass er Alkoholiker ist].
'Paul thinks no one would *ja* notice that he is an alcoholic'

Complement clauses of certain nouns of saying or thinking:

(41) seine Behauptung/Annahme, [$_{[V2,-w]}$ es würde ja keiner merken, dass er Alkoholiker ist]
'his claim/assumption that no one would *ja* notice that he is an alcoholic'

In many other cases, however, the parallel between MCP-I and [V2,-w] dissolves. First, there are many kinds of subordinated clauses that allow MCP-I but cannot take the form of a [V2,-w] clause, for example:

Complement clauses of certain (semi-)factive verbs:

(42) da er vergessen hat/sich darüber klar ist, [$_{VL}$ dass er ja bald entlassen wird]/*[$_{[V2,-w]}$ er wird bald entlassen].
'because he forgot/realizes that he will (*ja*) be fired soon'

Complement clauses of certain verbs of saying or thinking:

(43) da er betonte/daran dachte, [$_{VL}$ dass er ja bald entlassen wird]/
??[$_{[V2,-w]}$ er wird bald entlassen]
'because he pointed out/thought of the fact that he will (*ja*) be fired soon'

Appositive relative clauses:

(44) Paul, [$_{VL}$ der ja bald entlassen wird]/*[$_{[V2,-w]}$ der wird bald entlassen], sucht eine neue Stelle.
'Paul, who will (*ja*) be fired soon, is looking for a new job'

Non-restrictive temporal clauses:

(45) Er kam erst um Mitternacht, [$_{VL}$ als die Party ja schon vorbei war]/*[$_{[V2,-w]}$ als die Party war schon vorbei].
'He came only at midnight, when the party was (*ja*) already over'

Causal clauses:

(46) Paul sucht eine neue Stelle, [$_{VL}$ da er ja bald entlassen wird]/*[$_{[V2,-w]}$ da er wird bald entlassen].
'Paul is looking for a new job, because he will (*ja*) be fired soon'

Second, and perhaps more surprisingly, [V2,-w] is possible in several kinds of subordinated clauses that do not allow MCP-I, for example:
Complement clauses of certain verbs of thinking:

(47) Ich hoffe/fürchte, [$_{[V2,-w]}$ es wird morgen *ja/*doch/*offen gesagt regnen].
'I hope/am afraid it will *ja*/*doch*/frankly rain tomorrow'

Complement clauses of certain verbs of perception:

(48) Ich höre, [$_{[V2,-w]}$ du willst ??ja/*doch/*offen gesagt abreisen].

'I hear you *ja*/*doch*/frankly wants to leave'

Complement clauses of certain verbal predicates expressing a preference or a wish:

(49) Es wäre besser/Ich wünschte, [$_{[V2,-w]}$ Paul würde *ja/*doch/*offen gesagt bald abreisen].
'It would be better/I wish Paul would *ja*/*doch*/frankly leave soon'

Certain conditional clauses:

(50) Du kriegst ein Ticket, vorausgesetzt, [$_{[V2,-w]}$ du kommst *ja/*doch/*offen gesagt rechtzeitig].
'You will get a ticket, provided you will *ja*/*doch*/frankly be there in time'

2.1.3.2 Theoretical conclusions

Conclusion 1: The distributional differences illustrated by (42) – (50) clearly show that *[V2,-w] is not an MCP-I*.

Conclusion 2: The distributional differences in (47) – (49) show that *[V2,-w] is not a veridical element*, i.e. an element of linguistic form that, if occurring in a clause with proposition p, indicates that all grammatically licit uses of the clause express the attitude 'speaker assumes p'.

Let's discuss this in more detail. In the subordinated clauses of (47) – (49), *ja*, *doch* and *offen gesagt* are not possible. The reason is that they are veridical elements: They add the attitude 'speaker assumes p' to the grammatical meaning of the clauses and therefore require licit uses of these clauses to express this attitude. But the context of the subordinated clauses in (47) – (49) indicates that it is not the case that the speaker assumes p.[22] Therefore, *ja*, *doch* and *offen gesagt* are ruled out by HARMONY in these cases.

If this is correct, then the fact that [V2,-w] is possible in the subordinated clauses of (47) – (49) leads to the conclusion that [V2,-w] is not a veridical

22 In (47) and (49) the non-veridicality of the context is due to the lexical meaning of the elements that govern the subordinated clauses (*hoffen* 'hope', *fürchten* 'fear', *es wäre besser* 'it would be better'), which signal that the speaker does not assume or is not sure that the subordinated clause describes a fact. In (48), it is a default implicature of the use of *ich höre, dass* 'I hear that' that indicates that the speaker is not certain of the truth of the subordinated clause. (For default implicatures, see Levinson 2000. HARMONY is sensitive to such implicatures, cf. Jacobs 2018: 4.2.1.) For some speakers, however, *ich höre, dass p* seems to allow a shifted reading of *ja* in the complement clause, roughly as in 'Somebody told me that p'.

element. Otherwise, it would be ruled out by HARMONY, parallel to *ja*, *doch* and *offen gesagt*.

This result is fully compatible with (42) – (46). Whatever excludes the subordination of [V2,-w] clauses in these examples cannot be the meaning component 'speaker assumes p', for elements that contribute this meaning component, e.g. the MCP-I *ja*,, are possible in these clauses, albeit only in a shifted interpretation in (43).

Moreover, our conclusion that [V2,-w] is not a veridical element is not in conflict with the behavior of [V2,-w] in regard to ANTI-RESTRICTIVITY. Examples like (50) show that [V2,-w] clauses, in contrast to most MCP-I, are not generally ruled out in positions where they restrict a g-referring element (in this case the event-argument of the apodosis).[23] This is compatible with the claim that [V2,-w] is not a veridical element and supports the general impression that [V2,-w] is very different from MCP-I.

Conclusion 3: If [V2,-w] is not a veridical element, *it cannot be a marker of assertional sentence mood*, because such a marker would be a veridical element. This conclusion can be derived in four steps:

a) Under the explication of sentence mood sketched in 2.1.2 above, assertional sentence mood is a component of the grammatical meaning of clauses that requires all grammatically licit utterances of the clauses to express assertional illocutionary intentions, like INFORM, REMIND, CLAIM, CONFESS etc.
b) By expressing an assertional illocutionary intention speakers necessarily also express the assumption that the proposition is true. Take INFORM as an example: If by uttering a clause with proposition p we express the intention to cause the addressee to add p to the set of propositions s/he believes to be true, we commit ourselves to the assumption that p is true and thereby express this assumption. I presume that this is due to general principles of cooperative communication.
c) From a) & b) it follows that all licit utterances of clauses with assertional sentence mood express that the speaker assumes p to be true. Consequently, a grammatical marker of assertional sentence mood is a veridical element, i.e. an element of linguistic form that, if occurring in a clause, indicates that all licit uses of the clause express the attitude 'speaker assumes p'.
d) But, as we have seen above, the data show that [V2,-w] is not a veridical element. Therefore, [V2,-w] cannot be a grammatical marker of assertio-

23 Veridical MCP-I in the conditional clause of (50) are not only ruled out by ANTI-RESTRICTIVITY but also by HARMONY, due to the inherent non-veridicality of falls 'in case'. Cf. Jacobs (2017), (2018).

> nal sentence mood either. This conclusion converges with our intuitions about sentences like (47) – (50): Neither do speakers perform an assertional illocutionary act by uttering the subordinated [V2,-w] clauses in these sentences, nor do the sentences ascribe an assertional illocutionary act to the matrix subject.

This result contradicts the traditional view that [V2,-w] clauses are a type of sentences that is grammatically associated with assertion (hence the German term "Aussagesatz", as opposed to "Fragesatz" and "Aufforderungssatz"), a view that has been adopted, with varying terminology, by many more recent accounts of [V2,-w].[24] In Sec. 3 I will discuss some approaches which weaken or modify the assumption that [V2,-w] is grammatically associated with assertion.

Conclusion 4: *The illocutionary force of utterances of [V2,-w] clauses is determined purely pragmatically via P1.* This follows by abduction from the data, for it is the best way to account for them in our theoretical framework, given that [V2,-w] doesn't mark assertional sentence mood. In particular, it allows us to acknowledge that utterances of non-subordinated [V2,-w] clauses are often assertional illocutionary acts without having to ignore non-assertional uses of [V2,-w] clauses like those in (47) – (50). Remember that P1 will assign a suitable assertional intention if and only if there is such an intention. For utterances of non-subordinated [V2,-w] clauses, this will often be the case, i.e. there will often be an assertional intention that fits the speech situation and doesn't interfere with the content of the clause or with relevant constraints. In contrast, P1 will not assign an assertional intention to subordinated [V2,-w] clauses in non-veridical contexts like (47) – (50), for this would lead to a violation of a relevant constraint, HARMONY, since assertional intentions imply 'speaker assumes p', cf. above. Thus, P1 accounts for the fact that speakers do not perform assertional illocutionary acts by uttering the subordinated [V2,-w] clauses in (47) – (50).

Independent evidence for a purely pragmatic assignment of illocutionary intentions to utterances of [V2,-w] clauses comes from the extraordinary large illocutionary potential of this clause type. [V2,-w] clauses can not only be used as assertions but also as questions (*Das ist dein neues Auto?* 'That's your new car?'), directives (*Du setzt dich bitte sofort hin!* 'You will please immediately sit down!'), commissives (*Ich gebe es morgen zurück* 'I will give it back tomorrow'), or declarations (*Dein Name sei Elias* 'I name you Elias'). Moreover, if they take

24 For an overview, cf. Freywald (2013: 328f.). Researchers working in the tradition of Hooper/Thompson (1973) even assume that not only V2 but all main clause phenomena require some form of assertion, cf. Heycock (2006), Aelbrecht (2012b).

the form of explicit performatives (*Ich empfehle Dir, das zu überprüfen* 'I recommend that you check this'), they can be used as illocutionary acts of virtually any kind. This large illocutionary potential can be expected if [V2,-w] clauses don't have a sentence mood, for then P1 can assign to their utterances any illocutionary intention compatible with their content and with the speech situation, provided all relevant constraints are met. This view also frees us from having to derive all non-assertional uses of [V2,-w] clauses from assertions via pragmatic reasoning, which is often implausible, e.g. for uses as questions or explicit performatives. (P1 can assign an illocutionary intention directly, i.e. without calculating it from another, more basic illocutionary act, see 2.1.2.)

Further support for a purely pragmatic determination of the illocutionary force of utterances of [V2,-w] clauses comes from a comparison with the two other types of MCP, to which we now turn.

2.2 MCP-II

As already mentioned in the introduction to Section 2, MCP-II, e.g. speaker-oriented adverbs like *leider* 'unfortunately' and *sicherlich* 'certainly', or the discourse particle *wohl* 'presumably', are excluded from certain types of subordinated clauses, but less restricted in this respect than MCP-I. Jacobs (2018) argues that this reflects a quantitative difference in the context conditions that hold for the two classes of MCP. Whereas most MCP-I have to comply to all three conditions mentioned in 2.1.1, MCP-II are subject to HARMONY, but not generally to ANTI-RESTRICTIVITY and also not to ANTI-ACTIVATION (which will be ignored here).[25] For illustration, consider (51) – (52):

(51) Ich glaube nicht, dass Paul *leider/*sicherlich/*wohl/*ja schon promoviert ist.
'I don't believe that Paul unfortunately/certainly/presumably/*ja* already has a doctor's degree'

(52) Gestern rief jemand an, der sich leider/sicherlich/wohl/??ja verwählt hat.
'Yesterday someone called who unfortunately/certainly/presumably/*ja* dialed the wrong number'

25 For more details on these differences, cf. Jacobs (2018: 4.4.2).

All MCP in the non-veridical subordinated clause of (51) express that the speaker assumes p (although with reduced certainty in the case of *wohl*) and are therefore excluded by HARMONY. In contrast, in restrictive relative clauses like in (52), MCP-II are considerably better than MCP-I.

The *distributional differences to [V2,-w]* clearly show that [V2,-w] is not an MCP-II. These differences are largely as we expect from our assumption that MCP-II, like many MCP-I, are veridical expressive elements, whereas [V2,-w] is not, cf. 2.1.3.2. Consequently, non-veridical contexts that allow subordinated [V2,-w] clauses exclude or at least impede MCP-II[26]:

Complement clauses of certain verbs of thinking, e.g.:

(53) Ich hoffe, [$_{[V2,-w]}$ es wird morgen *leider/*sicherlich/??wohl regnen].
'I hope it will unfortunately/certainly/presumably rain tomorrow'

Complement clauses of certain verbs of perception, e.g.:

(54) Ich sehe, [$_{[V2,-w]}$ du willst ?leider/*sicherlich/??wohl abreisen].
'I see you unfortunately/certainly/presumably want to leave'

Complement clauses of certain verbal predicates expressing a preference, e.g.:

(55) Es wäre besser, [$_{[V2,-w]}$ er würde *leider/*sicherlich/*wohl bald abreisen].
'It would be better if he unfortunately/certainly/presumably left soon'

Certain conditional clauses:

(56) Du kriegst ein Ticket, vorausgesetzt, [$_{[V2,-w]}$ du kommst *leider/*sicherlich/*wohl rechtzeitig].
'You will get a ticket, provided you will unfortunately/certainly/presumably be there in time'

By confirming the assumption that [V2,-w] is not a veridical element, this comparison with MCP-II also supports our conclusion that [V2,-w] is not a marker of assertional sentence mood, and, indirectly, that the illocutionary force of utteran-

26 Evaluative MCP-II like *leider* are better in some non-veridical contexts than epistemic MCP-II, cf. (52), and they seem to be generally more flexible than other MCP-II, cf. Jacobs (2018: 4.4.1). Nevertheless, they clearly differ from [V2,-w] in regard to their distribution in subordinated clauses.

ces of [V2,-w] is determined purely pragmatically via P1, for the reasons outlined in 2.1.3.2.

2.3 MCP-III

The third type of German MCP differs sharply from the two other types. MCP-III are *never* possible in subordinated clauses, unless they are verbatimly quoted. The class is very heterogenous. It not only contains lexical elements, e.g. discourse particles in specific uses, but also certain forms of argument omission, e.g. object deletion in directive infinitives, as well as a large variety of clause types, including all kinds of verbless clauses. Examples are discussed in Jacobs (2018: Sec. 5). Of particular interest for the present discussion is the fact that V1/V2 word order in many clause types (except in [V2,-w] clauses, cf. below), is also an MCP-III, cf. (57)[27]:

(57) a. Es stimmt, dass Paul$_i$ sie fragte, *[$_{V1}$ kann ihm$_i$ jemand den Weg zeigen].
'It is true that Paul asked her can someone show him the way'
b. Es stimmt, dass Paul$_i$ sie fragte, ??[$_{[V2,+w]}$ wer kann ihm$_i$ den Weg zeigen].
'It is true that Paul asked her who can show him the way'
c. Es stimmt, dass Paul$_i$ sie bat, *[$_{V1}$ zeig ihm$_i$ den Weg].
'It is true that Paul asked her show$_{IMP}$ him the way'
d. Es stimmt, dass Paul$_i$ sagte, *[$_{V1}$ soll sie von ihm$_i$ aus zum Teufel gehen].
'It is true that Paul said for all he cares she can go to hell'

V1 polar questions, V2 constituent questions, V1 imperatives and V1 declaratives cannot occur in subordinated positions of German sentences except as verbatim quotations, cf. (57a), (57b), (57c), and (57d), respectively.[28]

27 To impede readings as non-subordinated clauses or as verbatim quotations, the V1/V2 complements in (57) are secondarily embedded into another complement and contain a 3rdP pronoun co-indexed with the matrix subject.

28 Note that (57a–d) become fully acceptable if the V1/V2 complements are replaced by their VL counterparts, e.g. by *ob ihm jemand den Weg zeigen kann* 'whether someone can show him the way' in (57a). This shows that it is really the V1/V2 clause type of the complements that causes the problems in (57).

2.3.1 Sketch of a theory of MCP-III

The explanation of MCP-III proposed in Jacobs (2018) refers crucially to *sentence mood constructions,* i.e. to grammaticalized patterns of clause formation that can be characterized as pairs <F^T, M^T>, where F^T is a schematic description of the form of clause type T and M^T is the sentence mood of this clause type.[29] Positing such a construction amounts to the hypothesis that M^T is marked holistically by the combination of formal features specified in F^T and cannot fully be derived compositionally.[30] The most important symptom of such a holistic marking of sentence mood are idiosyncrasies in the form-mood relation.[31]

I assume that typical MCP-III are elements that, in combination with other elements, constitute the formal aspect F^T of a sentence mood construction <F^T,M^T>. The fact that they cannot occur in subordinated clauses then follows from hypothesis H1:

H1 Clauses that conform to a sentence mood construction cannot occur in subordinated positions, unless as verbatim quotations.

If typical MCP-III are among the formal features that constitute the formal aspect of a sentence mood construction, they must be present in clauses conforming to this construction. But such clauses, according to H1, cannot be used as subordinated clauses, except when they are verbatimly quoted.[32] Consequently, MCP-III, in the role they play in the relevant clause type, cannot appear in subordinated clauses, either.

H1 correctly predicts the behavior of the examples of MCP-III mentioned above, cf. Jacobs (2018). Each of them exhibits idiosyncrasies which indicate that it is involved in a sentence mood construction. For V1/V2 order in the clause types exemplified in (57), this is shown in detail in Jacobs (2016).[33] Consequently, H1 correctly predicts that these elements of linguistic form cannot occur in subordinated clauses, except as verbatim quotations.

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29 For sentence mood, cf. 2.1.2 above.

30 For sentence mood constructions in German, see Jacobs (2016).

31 See Jacobs (2008), (2016).

32 Why this is so is discussed, but not definitely answered, in Jacobs (2018: 5.2). It may be that non-subordination is one of the formal features fixed by typical sentence mood constructions. In addition, some illocutionary intentions, e.g. directive intentions, seem to be non-shiftable, which makes complements whose sentence-mood requires one of these intentions uninterpretable when they are used in indirect speech.

33 The arguments are mainly based on idiosyncratic illocutionary differences, e.g. between V1 questions and V1 declaratives, for which compositional analyses (Lohnstein 2000, Truckenbrodt 2006) do not offer satisfactory explanations.

2.3.2 Comparison of MCP-III and [V2,-w]

The distribution of [V2,-w] is obviously different from the distribution of MCP-III. In particular, [V2,-w] clauses don't have to be verbatim quotations to be used in subordinated positions. Rather, they can serve as complements not only in indirect speech, as in (58), but also in other cases that do not involve verbatim quotation, cf. (59) – (60):

(58) dass er$_i$ behauptete, [$_{[V2,-w]}$ er$_i$ sei krank]
'that he said he is ill'

(59) die Hoffnung, [$_{[V2,-w]}$ es würde bald aufhören zu regnen]

(60) Es wäre besser, [$_{[V2,-w]}$ er würde bald abreisen].
'It would be better if he left soon'

MCP-III, in contrast, are impossible in such environments, cf. for indirect speech the examples in (57).

With the possible exception of a subtype of [V2,-w] clauses that will be discussed in Sec. 4, these differences prove that [V2,-w] is not an MCP-III. Furthermore, under the premises outlined in 2.3.1, cases like (58) – (60) lead to the conclusion that [V2,-w] is not a formal marker of an assertional (or any other) sentence mood construction. Otherwise these cases would be ruled out by H1. This confirms the theoretical conclusions we drew from the comparison with the other MCP types.

3 Alternatives to assertion

So all conclusions from our comparison with other MCP point into the same direction: The traditional assumption that [V2,-w] clauses are grammatically associated with assertion is wrong. One might object that this result is based on a specific theory of MCP that is not generally accepted. But the linguistic facts that support our conclusions pose a challenge to any theory of [V2,-w] in German:

(i) The distribution of subordinated [V2,-w] clauses differs from the distribution of other types of MCP in German, in particular of MCP like *ja* or *offen gesagt*, which on all accounts are veridical or 'assertional', and of most other V1/V2 clause types, e.g. V1/V2 questions, V1 imperatives, and V1 declaratives.

(ii) Subordinated [V2,-w] clauses are possible in linguistic environments in which they neither express an assertion of the speaker nor report the content of an assertional speech act of the matrix subject, e.g. in (47) – (50) above.

(i) has largely been overlooked in research on [V2,-w] in German. In contrast, the problem that (ii) poses for analyses of [V2,-w] that are based on assertion has not gone unnoticed. In what follows, I will briefly discuss four strategies to cope with this problem. The first three of them stick to the idea that [V2,-w] has a stable interpretive effect (a 'meaning') which has the potential to explain, or is at least compatible with, the restrictions on the occurrence of this word order type in subordinated positions. The fourth strategy gives up the idea of a stable effect and assumes that subordination of [V2,-w] clauses is governed by a form of local licensing.

3.1 Assertional proto-force

One way to deal with problem (ii) is to weaken the theoretical connection between [V2,-w] and assertion so that the putative interpretive effect of this word order type requires it to express an assertion only in specific contexts. This is the idea of Gärtner's (2002) hypothesis that [V2,-w] clauses have assertional proto-force, which has been adopted e.g. by Reis (2015). The behavior of assertional proto-force is assumed to be "determined by a number of (projection) rules sensitive to the semantic make-up of the structures they [i.e. [V2,-w] clauses, J.J.] get inserted into" (Gärtner 2002: 40). The intention behind these rules is that a subordinated [V2,-w] clause is semantically/pragmatically well-formed only if the proto-assertion expressed by it can be "absorbed" by the semantic environment, e.g. when it is embedded under a matrix predicate that denotes an act of assertion.

Under a sufficiently differentiated explication of the notion of absorption, assertional proto-force certainly has the potential to account for restrictions on the use of [V2,-w] in subordinated clauses and for the presence/absence of assertion in these uses.[34] But it also leaves open many questions, for instance why other clause types don't show comparable proto-force effects. Why, for example, is the illocutionary force of V1/V2 questions, of V1 declaratives, or of imperatives never absorbed by the context, so that they could be used in a larger number of subordinated posi-

34 Gärtner (2002) concentrates on [V2,-w] in restrictive relative clauses, as in (7) above. Gärtner/Michaelis (2010) explore a different way to weaken the notion of assertion, designed to capture the fact that speakers neither assert $[V2,\text{-}w]^1$ nor $[V2,\text{-}w]^2$ when they assert the disjunction $[[V2,\text{-}w]^1$ or $[V2,\text{-}w]^2]$. See also the remarks on (71) below.

tions, comparable to [V2,-w] clauses? Furthermore, why do MCP-I like *ja*, whose meaning can doubtlessly be shifted to, or 'absorbed' by, assertional matrix predicates, differ clearly from [V2,-w] in regard to their distribution in subordinated positions, cf. 2.1.3.1, even when shifting/absorption is involved, as in (43) above?

3.2 Main Point of Utterance

Another strategy to explain the distribution of subordinated [V2,-w] clauses without giving up the idea that their interpretive effect is in some way related to assertion could be based on the notion Main Point of Utterance (MPU), which played an important role in recent discussions of V2 in Scandinavian, e.g. in Wiklund et al. (2009) and in Jensen & Christensen (2013).[35] We could consider the following hypothesis:

H2 [V2,-w] clauses in German are possible in exactly those subordinated positions in which their utterance can be MPU.

An utterance U of a clause is MPU iff the proposition communicated by U constitutes an answer to an explicit or implicit question preceding U, cf. Simons (2007: 1035). MPU can be viewed as an explication of the notion "main assertion", which Hooper & Thompson (1973) regarded to be the crucial factor that licenses root phenomena in subordinated clauses (of English).

H2 correctly predicts several contrasts between [V2,-w] complements of different matrix predicates:

(61) A: Warum ist Paul nicht zur Party gekommen?
'Why didn't Paul come to the party?'
B: (i) Gerda sagt/denkt, [$_{VL}$ dass er keine Einladung bekommen hat]/
[$_{[V2,-w]}$ er hat keine Einladung bekommen].
'G. says/thinks that he didn't get an invitation'
(ii) Gerda bedauert/bezweifelt/vergaß, ??[$_{VL}$ dass er keine Einladung bekommen hat]/*[$_{[V2,-w]}$ er hat keine Einladung bekommen].
'G. regrets/doubts/forgot that he didn't get an invitation'

The question (61A) suggests a reading of the answers in (61B) in which their complement clause is MPU, i.e. in which the proposition of the complement clause answers

35 See also the discussion in Djärv, Heycock & Rohde (2016).

the question. In this reading, the complement clauses are acceptable under the matrix predicates in (61B i) and, as predicted by H2, can take the form of a [V2,-w] clause. The matrix clauses in (61B ii), in contrast, are in conflict with an MPU reading of their complement clauses in the context of (61A) and normally also in other contexts. As predicted by H2, these matrix predicates don't allow a [V2,-w] complement.

Interestingly, H2 also captures the fact that [V2,-w] complements are possible after certain non-veridical matrix predicates:

(62) A: Warum ist Paul so gut gelaunt?
'Why is P. in such a good mood?'
B: Ich hoffe, [$_{[V2,-w]}$ das liegt daran, dass er die Prüfung bestanden hat].
'I hope the reason is that he passed the exam'

(63) A: Kann ich meinen Chef zum Kaffee einladen?
'Can I invite my boss to coffee?'
B: Es wäre besser, [$_{[V2,-w]}$ du würdest ihn zum Abendessen einladen].
'It would be better to invite him to dinner'

Remember that other MCP cannot occur in such non-veridical environments, cf. (47) – (49) above. H2 accounts for this difference, in contrast to analyses based on traditional assertion.

But there are several cases for which H2 doesn't make correct predictions:

(64) A: Wie wird das Wetter morgen?
'What will be the weather tomorrow?'
B: (i) Ich hoffe, [$_{VL}$ dass es schön wird]/[$_{[V2,-w]}$ es wird schön].
'I hope it will be fine'
(ii) Ich erwarte, [$_{[V2,-w]}$ dass es schön wird]/??[$_{[V2,-w]}$ es wird schön].
'I expect it will be fine'

Both *hoffen* 'hope' and *erwarten* 'expect' allow their complement to be MPU, e.g. after the question (64A). But after *erwarten*, [V2,-w] complements are less acceptable than after *hoffen*, which is unexpected under H2. The same problem arises for several semi-factive verbs, e.g. *entdecken* 'discover' and *herausfinden* 'find out', whose complements can be MPU but take the form of [V2,-w] clauses only in so-called colon constructions,[36] i.e. when they are not subordinated, again in contrast to [V2,-w] complements of *hoffen*.

36 Cf. Reis (1997: 123).

In many other cases, H2 incorrectly rules out [V2,-w] clauses when they are actually possible, in particular when they are too deeply embedded to be MPU:

(65) Wenn Paul hofft, [$_{[V2,-w]}$ es würde nicht regnen], ist er zu optimistisch.
'If P. hopes it would not rain he is too optimistic'

It is hardly conceivable that the embedded [V2,-w] clause in this sentence could ever be MPU.

So although H2 has some advantages over accounts of [V2,-w] in terms of traditional assertion, it does not seem to be empirically adequate. The correlation between MPU and [V2,-w] is apparently too loose to allow precise predictions about when and where subordinated [V2,-w] clauses are possible in German.[37]

3.3 Truth judgment

A natural reaction to the problems discussed in the preceding sections is to abandon the idea that the interpretive effect of [V2,-w] is directly related to assertion, even in a weak or modified sense of the term. Lohnstein (2020) follows this strategy. He assumes that the meaning of [V2,-w] clauses is composed of the semantic effects of the two structural ingredients of this clause type: a) Fronting the finite verb serves to anchor the state of affairs described in the clause in the discourse, more precisely: to bind variables corresponding to Agr, Tense and Mood features to components of the discourse. b) Movement of a [-w] phrase to the prefield expresses a speaker judgment according to which an event corresponding to the anchored state of affairs actually exists, cf. Lohnstein (2020: Sec. 7).

Neither a) nor b), nor the combination of both leads to a semantic object that is directly related to assertion. Lohnstein rather assumes that assertion only comes in at the pragmatic level, when the judgment that the anchored state of affairs actually exists is communicated, or in Frege's words "announced", to an addressee in the discourse.

For [V2,-w] complements, Lohnstein assumes that they are licensed iff the clause is "informative w.r.t. to the participants knowledge about the belief system of the MSR [the referent of the matrix subject, J.J.], which is specified by the matrix predicate" (Lohnstein 2020: 7.4). In other words, the content of a [V2,-w] complement is interpreted relative to the beliefs of the MSR, and whether it is a

37 For Scandinavian V2 clauses, Wiklund et al. (2009) and Djärv, Heycock & Rohde (2016) came to essentially the same conclusion.

part of these beliefs must be an issue that has not already been settled between the interlocutors. The latter condition predicts – probably correctly, see Sec. 4 below – that [V2,-w] complements are never presupposed.

A clear advantage of this theory is that the interpretive effects assigned to [V2,-w] are derived compositionally and related to assertion only via pragmatic mechanisms. In the latter respect, the theory is similar to the analysis outlined in 2.1.3.2 above, which assigns illocutions to [V2,-w] clauses only via the pragmatic principle P1.

Nevertheless, Lohnstein's approach is not compatible with the results of our comparison of [V2,-w] and other MCP. Although [V2,-w] is not grammatically tied to assertion in this approach, it is still a *veridical element*, i.e. an element that indicates that the speaker believes p to be true, cf. 2.1.3 above. This follows from Lohnstein's assumption that, due to the [-w] phrase in the prefield, [V2,-w] clauses convey the speaker judgment that the state of affairs described in the clause corresponds to an actually existing event, cf. above. Consequently, all licit uses of [V2,-w] clauses are predicted to express that the speaker believes that p, i.e. the proposition corresponding to the relevant state of affairs, is true. But, as we have seen in 2.1.3, this is at odds with the fact that [V2,-w] clauses can be used in environments which are not in harmony with this speaker attitude and therefore reject bona fide veridical elements, e.g. the discourse particle *ja*.

This problem cannot be solved by assuming that the judgment that p is true is not ascribed to the speaker in the relevant cases, but to the MSR, the referent of the matrix subject. There either isn't an MSR to which the truth judgment could be ascribed, as in (66) – (67), or the propositional attitudes of the MSR, as described by the matrix predicate, imply that the MSR doesn't assume p to be true, thus blocking the use of bona fide veridical elements even in a shifted interpretation, as in (68):

(66) Du kriegst sicher ein Ticket, vorausgesetzt, [$_{[V2,-w]}$ du kommst *ja rechtzeitig].
'You will surely get a ticket, provided you will *ja* be there in time'

(67) Es wäre besser, [$_{[V2,-w]}$ er würde *ja bald abreisen].
'It would be better if he *ja* left soon'

(68) Er hofft, [$_{[V2,-w]}$ es wird morgen *ja regnen].
'He hopes it will *ja* rain tomorrow'

Furthermore, we must not forget that there also are uses of *non-subordinated* [V2,-w] clauses which don't convey the judgment that p is true. This happens, for

example, when [V2,-w] clauses are used as questions or (direct) commands, or when they are coordinated with *oder* 'or',[38] as in (69), (70) and (71), respectively:

(69) Das ist *ja dein neues Auto?
'That is *ja* your new car?'

(70) Du setzt dich jetzt *ja bitte sofort hin!
'You will *ja* please immediately sit down!'

(71) Er kommt ??ja morgen, oder er kommt gar nicht.
'He will be coming tomorrow, or he will not be coming at all.'

In none of these cases would it be plausible to assume that the utterance signals that the speaker judges p to be true. This is again confirmed by the fact that these uses of [V2,-w] clauses don't allow bona fide veridical elements. – I note in passing that such uses of independent [V2,-w] clauses don't pose a problem for the theory sketched in 2.1.3.2, according to which [V2,-w] clauses are associated with illocutionary intentions, and the speaker assumptions implied by them, only via the pragmatic principle P1, which assigns an illocutionary intention iff it fits the utterance situation and doesn't interfere with the content of the clause or with relevant constraints. This principle, supported by additional markings, e.g. rising intonation in (69) or the particle *bitte* 'please' in (70), can assign suitable non-assertional intentions to utterances of [V2,-w] clauses, e.g. an erotetic or a directive intention, and it will refrain from assigning an illocutionary intention when this would not be in harmony with the larger context, e.g. with *oder* 'or' in (71).[39]

3.4 Local licensing

Given that all theories based on the assumption that [V2,-w] has a stable interpretive effect seem to have problems to account for subordinated [V2,-w] clauses, one

38 For the latter case, cf. Gärtner & Michaelis (2010).

39 Another problem of Lohnstein's theory is that he assumes that subordinated VL clauses, in contrast to V1/V2 clauses, cannot be anchored to the discourse but only to the matrix situation, cf. Lohnstein (2020: 5.3). Because Lohnstein further (plausibly) assumes that anchoring to the discourse is a prerequisite for assertion, he predicts that speakers cannot use subordinated VL clauses as assertions. But this prediction is in conflict with the fact that many types of subordinated VL clauses can be, and often are, used as assertions, among them non-restrictive relative VL clauses and causal, adversative or concessive VL clauses. For many examples, cf. Coniglio (2011: 4.2).

should look for alternatives to this assumption. In particular, one should consider the possibility that the distribution of subordinated [V2,-w] clauses reflects a form of local licensing. In this view, the question whether [V2,-w] clauses can be used in a subordinated position P does not depend on a general interpretive effect of such clauses but on whether selectional requirements of the local syntactic environment E of P allow their use in P. An analysis of this kind is proposed by Freywald (2016: Sec. 4), and it is also the one that I favor.

Local licensing does not exclude that there are interpretive commonalities between different cases of subordinated [V2,-w] clauses, cf. below, but it does not have to subsume all these cases under one and the same 'meaning' of [V2,-w] and can therefore avoid many of the problems discussed in the preceding sections. On the other hand, local licensing raises several new questions, first of all what the relevant selectional requirements of the local syntactic environment E of P are. There are (at least) two possibilities:

a) The local syntactic environment E of position P corresponds to a *clause-subordination construction* which determines that [V2,-w] clauses can occur in P.
b) The *category of the matrix predicate* of E, in particular its subcategorization (or syntactic valency), determines that [V2,-w] clauses can occur in P.

Freywald (2016: Sec. 4), after considering a), favors b). She argues that idiosyncratic differences between matrix verbs w.r.t. to the possibility of [V2,-w] complements could be better treated in an approach of the second type. Indeed, such differences exist. Freywald mentions verbs like *beipflichten*, which block [V2,-w] in their complements although they are veridical verbs of saying, i.e. typical matrix verbs of [V2,-w]. We could add *erwarten* 'expect', cf. 3.2 above, which disallows [V2,-w] complements although it is semantically very similar to *hoffen* 'hope', which allows them, or semi-factive verbs like *herausfinden* 'discover' (also mentioned by Freywald), whose complements can hardly be [V2,-w] clauses in German, in contrast to complements of other semi-factive verbs, e.g. *wissen* 'know'.

But approach a) is not unable to deal with such lexical idiosyncrasies. Constructions often underspecify the structures they cover, but they don't have to do so. In particular, constructions can specify the lexical material filling certain terminal nodes if this is necessary to capture idiosyncrasies.[40] In fact, this is typical of a core class of constructions, viz. those corresponding to idioms. But also in a clause-subordination construction we could specify the verb or noun that fills the head position of the matrix predicate if the exact range of verbs/nouns in this position cannot be encoded by a more general condition.

40 Cf. Jacobs (2008: 2.1).

So both forms of local licensing can capture lexical idiosyncrasies of the matrix predicates allowing [V2,-w] subordination. Only the first, however, can deal with forms of local licensing that involve more global properties of the licensing environment, such as in the case of [V2,-w] relative clauses:

(72) Er hat ein Auto, $[_{[V2,-w]}$ das ist mehr als zwanzig Jahre alt].
'He has a car which is more than twenty years old'

The environment of this type of subordinated [V2,-w] clauses is characterized by a specific combination of formal and semantic features, see Gärtner (2002), Ebert, Endriss & Gärtner (2007), that cannot be reduced to the presence of a lexical element licensing [V2,-w].

A constructional version of local licensing can also account for *differences in the structural integration* of non-independent [V2,-w] clauses, i.e. differences w.r.t. whether the licensing environment leads to [V2,-w] clauses that are dominated by the minimal sentential node of a superordinate clause.[41] Typical examples of environments which do this, *integrating environments*, are those characterized by the presence of verbs/nouns of saying or thinking, like *sagen* 'say' or *Hoffnung* 'hope'. A typical example of a *non-integrating environment* for [V2,-w] clauses is the one characterized by the causal conjunction *denn*, which leads to structures in which [V2,-w] clauses are pragmatically dependent from, but not syntactically embedded into, the preceding clause. It seems natural, in fact inevitable, to attribute these differences to individual properties of the licensing environments. This holds regardless of the fact that some predicates that license [V2,-w] clauses can be used in both integrating and non-integrating environments, e.g. verbs like *feststellen* 'find out', which occur as matrix verbs of integrated [V2,-w] clauses but also in the non-integrating colon construction.

On the other hand, a theory based on local licensing can leave open all properties of individual cases of [V2,-w] subordination that can be safely derived from more general principles. Two of these properties are of particular interest in the present context: the ability of subordinated [V2,-w] clauses to host other MCP and their possible use as assertions. So, for example, whether discourse particles like *ja* are allowed in a subordinated [V2,-w] clause can be derived from the context conditions on MCP-I sketched in 2.1.1, which predict, for example, that veridical MCP-I are possible in cases like (39) – (41) and excluded in cases like (47) – (50). Given the parallel between MCP-I and illocutionary intentions outlined in 2.1.2, the same conditions also explain why [V2,-w] clauses of the kind

41 Cf. Reich/Reis (2013).

illustrated by (47) – (50) cannot be used as assertions. These facts therefore need not be stipulated in the description of individual licensing environments, nor do they cause problems for the assumption of a stable interpretive effect of [V2,-w], for an approach based on local licensing does not make such an assumption.

Another variable property of subordinated [V2,-w] clauses that is likely to follow from more general considerations is the verbal mood of the clauses. In particular, whether the finite verb must have, can have, or cannot have subjunctive form can probably be predicted on the basis of a suitable theory of the relation between clause types and verbal mood, such as outlined in Sode & Truckenbrodt (2018), and need not be treated as an individual trait of licensing environments.

It should finally be noted that local licensing does not exclude that there are commonalities between forms of [V2,-w] subordination that do *not* follow from more general conditions. A case in point is that subordinated [V2,-w] clauses of German apparently cannot be *presupposed*. This manifest itself in the fact that true factive verbs, e.g. *bedauern* 'regret' or *sich schämen* 'be ashamed', never accept [V2,-w] complements. Moreover, semi-factive verbs like *wissen* 'know' seem to allow a [V2,-w] complement only if the proposition of the complement is not in the common ground.[42] Anti-presuppositionality could be implemented as a constraint on the constructions that license subordinated [V2,-w]. Whether there is a deeper reason for this constraint can be left for further research.[43]

4 Non-neutral [V2,-w]

Further research will also be needed to clarify other peculiarities of subordinated [V2,-w] clauses, for example the fact that, as a rule, subordinated positions exclude [V2,-w] clauses with *non-neutral syntax*, i.e. with an arrangement of constituents that requires a special information structure. For instance, subordinated [V2,-w] clauses don't allow indefinite objects in the prefield, a word order that requires narrow focus on the object or I-topicalization[44]:

42 In Swedish, V2 complements of semi-factive verbs can be presupposed, cf. Wiklund et al. (2009: Sec. 5). This points to more general differences between Scandinavian and German V2 complements, cf. also Scheffler (2008).

43 But note that the reason cannot be that V2 complements must be assertions or Main Point of Utterance. Such explanations in the tradition of Hooper & Thompson (1973) would be untenable in the light of the results of the present paper.

44 For I-topicalization, see Jacobs (1997).

(73) Es wäre besser, [$_{[V2,-w]}$ er bekäme bald eine Stelle]/*[$_{[V2,-w]}$ eine Stelle bekäme er bald].
'It would be better if he soon got a job'

Another case in point are [V2,-w] clauses with an empty element in the prefield ('topic drop'). Their use requires this element to be given, but even if this requirement is met, such clauses cannot be subordinated:

(74) weil ich hoffe, [$_{[V2,-w]}$ das ist ihm egal]/*[$_{[V2,-w]}$ Ø ist ihm egal]
'because I hope he doesn't care (about it)'

Pending further clarification, examples like these suggest that non-neutral syntax in [V2,-w] clauses is an *MCP-III*, i.e. a phenomenon that is principally excluded from subordinated clauses. In the perspective of the explanation of MCP-III sketched in 2.3, we would then expect non-neutral [V2,-w] syntax to be a formal marker of one or more unembeddable constructions. To explore this, however, is beyond the limits of the present paper.[45]

In any case, if non-neutral [V2,-w] syntax proves to be an MCP-III, the main result of the preceding sections has to be qualified: [V2,-w] in clauses with *neutral syntax* differs from all other main types of MCP in German and therefore cannot be subsumed under the conditions governing these types of MCP. [V2,-w] clauses with *non-neutral* syntax, in contrast, may be an instance of one of these main types of MCP and subject to the same kind of conditions.

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45 In a cartographic perspective on MCP, an explanation that might suggest itself is that non-neutral [V2,-w] clauses differ from neutral ones in having a more extended left-periphery which somehow prevents them from occurring in subordinated positions. This mode of explanation, however, would not be very plausible for cases like (74), and it cannot be generalized to other types of MCP-III, e.g. to verbless clauses.

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Horst Lohnstein and Nathalie Staratschek

The left periphery as interface – On verb second and finiteness interaction

Abstract: The components of *finiteness* (*tense, mood, person and number*) are scrutinized with reference to their influence on verb second word order. Semantic interpretations are assigned to basic properties of these categories, whose combination allows for a derivation of the main properties of (V2-)clauses in a compositional fashion. In particular, various uses of the notion *as-sertion* in the literature are investigated and analysed. We favour Frege's analysis of the judgment and reconstruct the *fronting of finiteness* as anchoring a propositional object in the discourse situation, thereby modelling the grammatical basis of the notion *at-issueness*. The investigation is concerned with root as well as with dependent clauses.

The expressiveness of the system of human language is determined by a set of atomic and idiomatic units (lexicon) and a set of rules which specify the principles for combining the (elementary and complex) linguistic components (syntax). The meaning of complex expressions – following Frege's principle of compositionality – needs to be computed from the meaning of their primitive parts together with their syntactic structure.

In this paper we propose an analysis of the subcomponents of finiteness as well as verb second (V2) word order and their contribution to the meaning of the structures they appear in.[1] In particular, we give an analysis of finiteness in terms of the inflectional categories *tense*, *mood*, and *agr* the latter consisting of *person* and *number* specifications. Depending on the properties of these inflectional units and their semantic contribution we motivate the V2 property in German(ic) as *fronting of finiteness* with the effect of anchoring the expressed propositional object in a structure of higher order – discourse or matrix (Rizzi 1997).[2] The characteristic quality of root clauses is their being anchored in a discourse situation which contains inter alia specifications for speaker and addressee. The assumption that a clause unfolds its illocutionary force, is only sensible in an interactional setting with these two components. Since V2 typically leads to a root interpretation, the

1 We will be focusing on German and leave the application to a broader spectrum of languages to further research.

2 We do not address sentences with V1 explicitly at this point.

Horst Lohnstein, Nathalie Staratschek, University of Wuppertal

https://doi.org/10.1515/9781501508141-007

question arises in which way V2 clauses relate to discourse contexts. This is the leading question throughout the paper.

As Bayer (2010) convincingly argued, V2 occurs for reasons of fronting *finiteness features*, not due to fronting *verbal features*. The task at hand, therefore, consists in scrutinizing the properties of the inflectional features located in the finiteness component. We follow the line of theorizing proposed in Lohnstein (2020) who assumes V2 to occur for reasons of transfering the features of finiteness (*tense*, *mood*, *agr*) to the left sentence periphery in order to have access to components of the discourse context. These features have to enter the C-domain for reasons of valueing the deictic variables of tense and mood in the case of finite clauses.[3] In the case of the "semi-finite" imperative (Donhauser 1986) lacking tense and mood specifications the agr-features do not have values because of the omitted subject. The features *person* and *number* require a value from the discourse context – the addressee. The C-system can be regarded as an interface between the propositional core of a clause and a higher ordered structure as Rizzi (1997) proposed. In particular, tense needs the *time of speech* and mood needs the *context of speech*, while in cases of imperatives Agr needs the *addressee* in the speech situation for an appropriate interpretation. Since these features do not get values inside the propositional core of the clause, they have to leave this domain, enter the C-interface, get access to these components of the discourse context, and value the deictic variables of the (finiteness) features. The information necessary for the values of these features is available in the discourse situation only. We refer to these processes as the *anchoring of a propositional object in the context of discourse*.[4]

In addition to that, we take – as usual – the fronting of another constituent of arbitrary category to be responsible for the V2-property (Holmberg 2015). A crucial distinction in reference to the class formation of this constituent consists in the feature [±wh] which – if fronted to the left periphery – leads to a declarative clause in the case of [–wh] (1.a), and to a wh-interrogative in the case of [+wh] (1.b). A yn-interrogative results if this position remains empty (1.c). Imperative marking on the verb yields an imperative clause without the necessity of fronting

3 Another mechanism to attribute the respective values is a connection established by a complementizer in embedded verb final clauses. When following Rizzi (1997), the sentence can be linked to a matrix context, validation can occur via this complementizer. If no matrix context is available, e.g. in cases of disintegrated verb finals, the discourse seems to be the default context of higher order. In section 5 we will describe the ambiguities arising from diverging contexts being available.
4 The term *anchoring* was originally proposed by Enc (1987) and explicated in terms of structural government relations. Since then, it appears as a core concept in the literature.

any XP, although fronting a [-wh]-XP does not change the sentence mood (1.d) and (1.e), while fronting of a [+wh]-XP leads to ungrammaticality (1.f)[5]:

(1) a. Morgen wird Karl ~~morgen~~ Pudding kochen ~~wird.~~
Tomorrow will Carl ~~tomorrow~~ pudding cook ~~will~~
'Carl will cook the pudding tomorrow.'

b. Wann wird Karl ~~wann~~ Pudding kochen ~~wird?~~
When will Carl ~~when~~ pudding cook ~~will~~
'When will Carl ~~when~~ cook the pudding?'

c. Wird Karl morgen Pudding kochen ~~wird?~~
Will Carl tomorrow pudding cook ~~will~~
'Will Carl cook the pudding tomorrow?'

d. Koch morgen Pudding ~~koch!~~
Cook-IMP tomorrow pudding ~~cook~~
'Cook the pudding tomorrow!'

e. Morgen koch ~~morgen~~ Pudding ~~koch~~, Karl!
Tomorrow cook-IMP ~~tomorrow~~ pudding ~~cook~~ Carl
'Cook the pudding tomorrow, Carl!'

f. *Wann koch ~~wann~~ Pudding ~~koch,~~ Karl!
When cook-IMP ~~when~~ pudding ~~cook~~ Carl
'When cook the pudding, Carl!'

The semantic objects are (judged) *propositions* as representations of declarative clauses, *partitions* represent the meaning of interrogatives and *properties* characterize the semantic values of imperative clauses as Lohnstein (2000, 2020) proposed. This approach relates concepts developed in Frege (1919/1966), Groenendijk & Stokhof (1982), Ciardelli, Groenendijk & Roelofsen (2013), and Portner (2005, 2007) to the morphosyntactic building blocks of the grammatical system in a compositional fashion. It does not make use of silent material (invisible features, illocution type operators and so on) at the clausal left periphery as for instance proposed early in Katz & Postal (1964), Ross (1970), Lewis (1970) and many follow up approaches.

5 Note, that (1.f) is an instance of short [+wh]-imperative-movement, which is ungrammatical. But as Reis & Rosengren (1992) pointed out convincingly that long [+wh]-imperative-movement is a grammatical option in German preserving the imperative mood of the matrix clause. However, the scope of the [+wh]-XP is restricted to the clause containing its base position.

The crucial property uniting the clauses in (1.a) to (1.e) consists in their 'root' interpretation as possessing illocutionary force. This means that the proposition in (1.a) is *asserted* or otherwise interpreted in an illocutionary manner, the questions in (1.b) and (1.c) are *posed* and the contents of the imperative clauses in (1.d) and (1.e) are *ordered* (*commanded*, *requested*, ...). Embedded interrogatives do not *pose* questions, and verb final declaratives embedded under attitude verbs need not even be true and certainly are not *assertive*. Whether embedded imperatives exist at all and if so which restrictions they have to obey is a matter of debate (cf. Meinunger 2004, Kaufmann & Poschmann 2013).

Syntactically, these clauses share one property: The finite verb is fronted to the left periphery. In this paper we will argue that this *fronting of finiteness* occurs in order to anchor the porpositional object in the discourse context. We argue that V2 in root clauses, in clauses embedded under attitude verbs as well as in adverbial clauses, are captured by the same principles of syntactic and semantic composition.

The paper is organized as follows. In section 1 we will take a look at the organization of the inflectional system in German which distinguishes forms for *tense* and *mood* as well as *agr*. Only two tenses (and depending on that – moods) have inflected forms, while the others rely on periphrastic constructions. The properties of this system reveal a dependence between tense and mood forms, since the mood *conjunctive 1* is built on the basis of the present tense forms, while the mood *conjunctive 2* is built on the basis of the past tense forms. We refer to the work of Bredel & Lohnstein (2001) and give a slightly different analysis of the respective markings together with their semantic interpretation. This view allows us to grammatically discriminate two distinct contexts of speech to account for direct and indirect speech on the one hand, and two distinct values for the evaluation of the propositional object to account for preceding and counterfactual events on the other hand. This section will also discuss some components of context structure in order to explicate some uses of conjunctive 1 in German.

We will then turn to the notion of *assertion* in Section 2 and discuss several concepts used to characterize its general properties. Additionally, we intend to show that some aspects of assertions are expressible through grammatical means, while others are only sensible if they are interpreted in an interactional setting. In particular, we claim – in accord with Frege's (1919/1966) analysis – that an assertion expresses the speakers *judgment* about a thought and that this judgment constitutes an *individual epistemic act*. As a consequence of proclaiming this judgment to some addressee(s) the speaker is responsible for the correctness of this very judgment. He thereby burdens himself with the *social commitment* to the truth of the statement in a communicative situation. The first act belongs to *semantics* and is expressed syntactically by a V2 clause with a [-wh]-XP in the position SpC. The latter belongs to *pragmatics* and is a property of the *speech act*, since without an

addressee no commitments arise at all. In section 3 we give an explication of the relevant properties in terms of Farkas & Bruce's (2010) discourse table and formulate two principles of anchoring propositional objects in discourse contexts. Based on the anchoring principles, we give a grammatically based explication of *at-issueness*.

In section 4, we will proceed to examine the application of the presented V2-analysis and will therefore deal with V2 under attitude verbs. Referring to this, we will look at the assertive interpretation which is often attributed to them. We claim that the assertive effect stems from a double access reading that may emerge under specific circumstances but is not applicable to all instances of embedded V2. Moving on, section 5 will deal with adverbial clauses that allow for V2 and its interpretation. We will argue that the two anchoring principles from section 2 are sufficient to derive the pertinent interpretational effects associated with these clause types.

1 Inflectional morphology

1.1 Tense

Reichenbach's (1947) analysis of the tense system distinguishes three points (or intervalls) in time to describe the tenses of English: the time of speech S, the time of event E, and the reference time R for complex tenses (2.a). These three points can enter into various configurations, for instance the one representing the future perfect as illustrated in graphics (2.b):

(2) a. Reichenbach's S, E, R:

b. Future Perfect: S < E < R:

The relation between S and E characterizes *tense* with the possible intervention of R. S is the time of speech every root clause is related to. E is the time at which the propositional object becomes evaluated: somewhere in the past, present, or future relative to the time of speech S. S has to be determined, whenever a root clause is uttered. Therefore, tense – roughly – constitutes a two place relation between S and E. Let us abbreviate this relation with the following notation:
$S \leftrightsquigarrow_t E$ – the temporal relation between S and E with $\leftrightsquigarrow_t \in \{<, =, >\}$.

Consider an embedded clause like (3):

(3) Karl glaubte (vor einem Jahr), dass Hans (in den Jahren
Carl believed (before one year) that Jack (in the years
davor) glücklich war.
before) happy was
Carl believed (a year ago) that Jack had been happy (the years before).

As von Stechow (2005: 28) points out, embedded clauses under attitude verbs usually do not allow for an interpretation with a "deictic" tense. This means that it is not the actual time of speech (t_c of the context c of the speech situation) with respect to which the complement clause is interpreted, but the time of the *believe* event (one year ago).

The tense in the embedded clause is assumed to be *relative* to the time of the matrix context, and not *deictic* considering the speech situation. Consequently, the temporal structure in (3) is as follows: The time of speech t_c, the tense of the main clause, relates t_c to the time of the believe-event t_{bel}: $t_c \leftrightsquigarrow_t t_{bel}$ (the speaker says at time t_c that Carl believed at time t_{bel} proposition p). The embedded proposition p states *that Jack was happy the years before*. Since the embedded tense (together with this type of adverbial)[6] is relative, the years in which Jack was happy t_{Jbh} is related to the time t_{bel} of Carl's believing it. Thus, the time t_{Jbh} of Jack's being happy in the years before (the time of the embedded clause) has to be identified with the event time t_{bel} of the main clause (the years before count backwards and start at the time of Carl's believing it). In order to adjust the terminology to our approach, let us rename Reichenbach's S and call it the *time of anchoring* t_c in a speech context c in the case of root clauses.

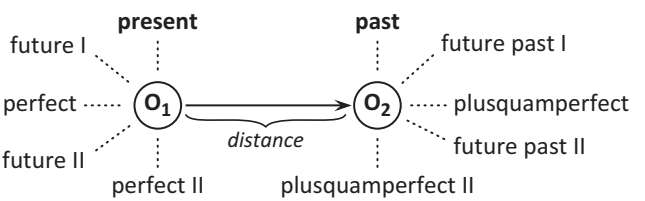
Inflectionally, the morpheme '-t' is assumed to mark the weak verbs for past tense in German. The other inflecting element, which is relevant for the propositional content in German, is '-ə'. Since the class of weak verbs

6 Three types of adverbials need to be distinguished according to the time from which the temporal position is calculated:
a. absolute: on March 25, 2014, ...
b. deictic: tomorrow, yesterday, ...
c. relative: the day before, after three days, ...

To exemplify this point: If on Tuesday, March 23, 2014 the following utterances occur ...
a. "Jack believed a week ago, that Peter will arrive on March 25, 2014.",
... then Peter arrives at this date independent of the special date.
b. "Jack believed a week ago, that Peter arrived tomorrow.",
... then Peter arrives on Wednesday, March 24, 2014.
c. "Jack believed a week ago, that Peter will arrive after three days.",
... then Peter arrives on Friday, March 21, 2014.

provides the systematically inflecting form, '-t' and '-ə' can be assumed to be the relevant markers for the temporal and modal interpretation of the respective propositional objects, as Bredel & Lohnstein (2001) propose. The question whether and if so how the various functions of the '-t'-morpheme can be unified led them to an analysis proposed originally by Thieroff (1992) for German. In Thieroff (1992) and Thieroff (1994: 128) – on the basis of an analysis of some romance languages by Feuillet (1982: 17)[7] – the author assumes that a *distance*-relation holds between the present and the past tenses in German, which are grouped around two different origines O_1 and O_2 respectively. Thus, O_1, the origo for the present tenses and O_2 for the past tenses are separated by the category *distance*. Thieroff's system distinguishes ten tenses for German and can be illustrated as in (4):

(4)

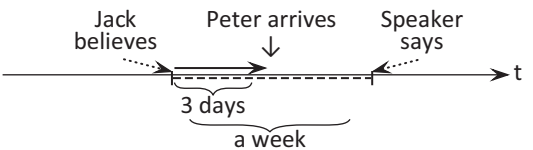


Bredel & Lohnstein (2001) correlate the relation of *distance* with the inflectional morpheme -t which is assumed to mark past tense.

Summarizing, the main effects, which are relevant for our purposes here, can be captured in the following way. In main clauses tense is usually interpreted *deictically* – the anchoring time is the time of speech. This time t_c is related to the *time of event* t_e. The tense in clauses which depend on verba dicendi or attitude verbs is *relative* and t_c of the embedded clause is to be identified with the *time of event* t_e of the next higher clause. (5) gives an illustrating example:

(5) a. Jack believed a week ago that Peter will arrive after three days.

b.



7 Feuillet (1982: 17) analyses the past tense as "distanciation de la realité ou de l'actualité".

The beginning of the time span of three days starts at the time at which Jack believes p – the event time of the matrix clause is identical with the time at which the time span of the adverbial (in three days) of the embedded clause starts. The arrival happens after these three days which means that Peter arrived four days before the speech event.

1.2 Verbal mood

Let us turn to the category *verbal mood* next. In German verbal mood is expressed through the phonetic unit '-ə'. It appears in all inflectional forms of the *conjunctive* in strong verbs as well as in weak verbs throughout the paradigm.[8] We therefore assume '-ə' to be the marker of the conjunctive. Since conjunctive 1 is built from the present tense forms, and conjunctive 2 from the past tense forms, the two forms depend on the markings for present and past respectively.

Although it is well-known that in reportive speech the forms can be substituted for each other to some degree (cf. Fabricius-Hansen 1999, Fabricius-Hansen & Sæbø 2004, Sode & Truckenbrodt 2018), the particular forms have interpretations that discriminate them from one another. Conjunctive 2 can be used for counterfactual conditionals (6.a), while conjunctive 1 or indicative cannot. It is possible to pose questions with conjunctive 2 (6.b) and (6.c), but not with conjunctive 1.[9] Conjunctive 1 can be used to express an order relative to another situation, while conjunctive 2 cannot (6.d)[10]:

(6) a. i. Wenn ihr lach-**t**-**e**-t, lach-**t**-**e**-n wir auch.
If you laugh-CONJ 2, laugh-CONJ 2 we too.
'If you laughed, we would have laughed too.'

ii. *Wenn ihr gelacht habet, haben wir auch gelacht.
If you laugh-CONJ 1, laugh-CONJ 1 we too.

8 Note that the past tense forms of the weakly inflecting verbs are identical to the forms of the conjunctive. But ə appears throughout the whole paradigm of the conjunctive forms (conjunctive 1 and 2 of the strongly and weakly inflecting forms), while on the side of the indicative ə appears only on the past tense forms of the weakly inflecting verbs. Bredel & Lohnstein (2001) proposed an analysis that the ə in the past form of the weakly inflecting verbs happens for phonotactic reasons, namely to constitute a bisyllabic foot.

9 Reported questions can be formed, but they can by no means *pose* questions.

10 Although (6.d-ii) is not ungrammatical, it has an entirely different meaning than (6.d-i). (6.d-ii) can only be interpreted as a conditionally interpreted yn-question.

b. i. Hätte Hans die Prüfung bestehen können?
Have-CONJ 2 Jack the examination pass can
'Could Jack have passed the exam?'
ii. * Habe Hans die Prüfung bestehen können?
Have-CONJ 1 Jack the examination pass can

c. i. Wer wäre stattdessen gekommen?
Who be-CONJ 2 instead come
'Who would have come instead?'
ii. *Wer sei stattdessen gekommen?
Who be-CONJ 1 instead come

d. i. Trage er auf, was Küche und Keller zu bieten haben!
Dish-CONJ 1 he up what kitchen and cellar to provide have
'He should dish up what kitchen and cellar provide!'
ii. Trüge er auf, was Küche und Keller zu bieten haben?
Dish-CONJ 2 he up what kitchen and cellar to provide have
'Would he dish up, what kitchen and cellar provide?'

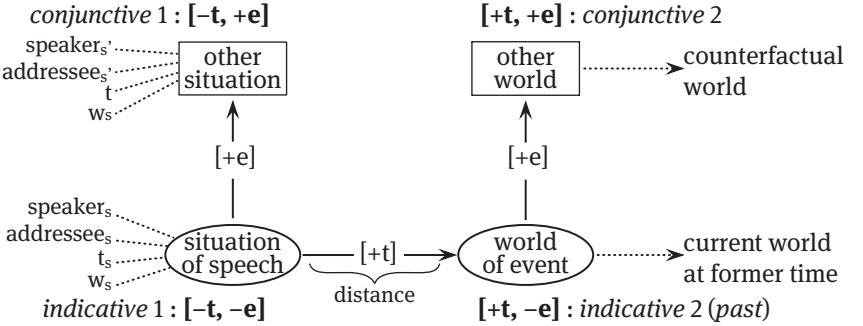
For reasons of exposition let us assume that there are two formal features [±e] and [±t] for the two markers '-ə' and '-t' respectively. These makers appear in combination with positive or negative values. All in all, the combinations yield a four place matrix with cells that correspond to the four inflectional forms in German with respect to *tense* and *mood*[11]:

(7) [–t, –e]: indicative 1
[–t, +e]: conjunctive 1
[+t, –e]: indicative 2
[+t, +e]: conjunctive 2

Following the analysis of Bredel & Lohnstein (2001), the verbal inflectional unit with feature [+e] is used to mark the conjunctive, while [+t] marks *distance*. The combination [+e, +t] may be interpreted as counterfactivity of the proposition, although other uses are possible. In graphic (8) we try to illustrate the specific functions of the particular forms marked with [±e, ±t]:

11 The labels indicative 1 and 2 are built in analogy to the conjunctive 1 and conjunctive 2 forms, i. e. the 1-forms for the present and the 2-forms for the past. For further details see Bredel & Lohnstein (2001).

(8)



(9) a. Conjunctive 1:
Er lach-**e** immer, sagt Karl.
He laugh-CONJ 1 always, says Karl.
'He always laughs, says Karl.'

b. Indicative 2 (past):
Er lach-**t**-e gestern.
He laugh-IND 2 yesterday *simple past*
'He laughed yesterday.'

c. Conjunctive 2
Wenn er lach-**t**-**e**, lach-**t**-**e**-t ihr auch.
If he laugh-CONJ 2, laugh-CONJ 2 you too.
'If he laughed, you would have laughed too.'

The feature [+t] shifts the evaluation of the proposition – the *content* in Kaplan's (1989) terminology – to another domain: if only [+t] appears the domain of evaluation is shifted temporally, if combined with [+e] a modal shift takes place. The marker [–t] specifies the contextual situation – the *context* in Kaplan's (1989) conception. The marker [+e] functions on the side of the *context* as well as for the *content*. The marking [–t, +e] signals that the proposition is related to another situation (cf. Fabricius-Hansen & Sæbø 2004).

The weak verbs in German show the marker [+t] systematically in their base forms (*lach-en*, *lach-**t**-e*, *ge-lach-**t*** – 'laugh', 'laugh-ed', 'laugh-ed').[12] The feature [+e] in combination with [+t] leads to the conjunctive 2 form with the pivotal

12 Note, that weak inflection is the systematic way to inflect verbs in modern German as is witnessed by the inflected forms of verbs which enter into German as new lexical items: *googel-n*, *googel-**t**-e*, *ge-googel-**t***, *twitter-n*, *twitter-**t**-e*, *ge-twitter-**t***.

function of marking counterfactuality.[13] This analysis of the inflectional features [±e] and [±t] not only explains the fact that the forms of the verbal moods depend crucially on the forms of so-called tense, but in addition allows for a compositional derivation of their functional properties, as illustrated in (8). However, the interchangeability of verbal moods in the case of reported speech remains to be explained.

The feature [+t] fits well with the *exclusion feature (ExclF)* proposed by Iatridou (2000: 246). She proposes that *ExclF* excludes the topic time T(x) (Klein 1994) from C(x) which is assumed to be the time of the current speech event.[14]

Analysed the way proposed by Bredel & Lohnstein (2001), the inflectional marker [+t] encodes exactly this kind of distance relation between present and past. In combination with the [±e]-marker the formal distinctions lead to factive and counterfactive situations in the same fashion.[15]

With the conjunctive 1 introducing the condition (presupposition as Fabricius-Hansen & Sæbø (2004) put it) that another context has to exist to interpret a reported speech adequately we are now able to pinpoint the fact that a relation between the current situation of speech and another situation of speech is marked by [+e, –t] (cf. (8)). The conjunctive 2 introduces the condition that the world of evaluation has to be a counterfactual world w'.

The following characterizations capture the pertinent findings:

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13 It has to be acknowledged for German that marking counterfactuality is not the only function of the conjunctive 2. As mentioned earlier, it can serve as a substitute for conjunctive 1 in reported speech, but also in conditionals, although the expressed state of affairs exists, which means that it is factive:

a. Wenn Du mir hilfst, hätte ich noch ein Bier.
   If you me help have-CONJ 2 I still a beer.
   If you help me, I will have a beer.

The speaker has indeed a beer, although conjunctive 2 is used. The fact of possessing the beer does not depend on the protasis of the conditional.

14 As Iatridou (2000: 246) put it: "*T(x) excludes C(x)*
T(x) stands for 'Topic(x)' (i.e., 'the x that we are talking about'). C(x) stands for 'the x that for all we know is the x of the speaker.' From now on I will use the term exclusion feature (ExclF) to refer to the feature that, when it ranges over times, we call 'past tense'." ExclF is not only relevant for the distance between present and past, but for the different references to factive or counterfactive situations as well.

15 The imperative does not belong to the system of verbal moods in the same sense as indicative and conjunctive do, since the verbal marking of the imperative has no features for tense and mood, but exhibits person and number markings only. Therefore, Donhauser (1986) called it a "semi-finite" form. We do not want to go into the details of the connection between imperative marking and verb second here (for an analysis cf. Lohnstein 2020).

(10) Conditions for the inflectional markings:
   a. Indicative 1 marked by [–e, –t] is evaluated relative to the currently specified situation.[16]
   b. Indicative 2 (simple past) marked by [–e, +t] requires beside the current time t another time t' (t' < t).
   c. Conjunctive 1 marked by [+e, –t] requires beside the current situation of speech s another situation of speech s' (s ≠ s').
   d. Conjunctive 2 marked by [+e, +t] requires beside the current world w another evaluation world w' (w ≠ w').

The next section investigates the notion of *context* in detail.

1.3 Context

Let us next characterize the notion of *context* in detail. A context c of speech is often represented inter alia by the three components ⟨speaker, time, world⟩ (cf. Bühler 1934, Kaplan 1989, Schlenker 2003, Eckardt 2014, Sode & Truckenbrodt 2018). Bühler (1934) used the term *I-here-now-origo* to name the center of a coordinate system with the dimensions of *person*, *time*, *place*. Other authors take c to be a tupel $\langle x_c, t_c, w_c \rangle$, x the agent who speaks in c, t the time of c, and w the world in which the speech event takes place.

Bredel & Lohnstein (2001) use a three dimensional coordinate system with person-, time-, and world-axis with an origo as deictic centre. Shifts along the respective axis can happen by means of the *distance*-relation mentioned in section 1.2 to leave the origo.

Sode & Truckenbrodt (2018) propose a feature [±origo] to mark whether an utterance is anchored in the current context of speech ([+origo]) or in a different context ([–origo]). With the help of this feature they discriminate the current speech act from

16 Note that in German a historic as well as a future use of the present tense is possible, but only with the help of respective adverbials (cf. for instance Bäuerle 1978, 2002):

1. Nächste Woche fahre ich nach Spanien.
   Next week drive-PRESENT I to Spain
   'Next week, I will go to Spain.'

2. Im Jahr 1789 findet der Sturm auf die Bastille statt.
   In year 1789 occurs-PRESENT the storming of the Bastille V-PARTICLE
   'In year 1789, the storming of the Bastille occured.'

Other phenomena like past tense uses with future adverbials are due to the literary genre as for instance the prominent example shows: *Morgen war Weihnachten* 'Tomorrow was-past chrismas.' (cf. Klein 1994)

a reported speech act. In the latter case another context c' $\langle x_{c'}, t_{c'}, w_{c'} \rangle$ is selected as the context in which the reported speech act has taken place (cf. also Schlenker 2003).

In the system presented here, the inflectional markers express this property by the markings [–t, –e] (indicative 1) vs. [–t, +e] (conjunctive 1). These features are not abstract and silent, but instead are provided by inflectional morphology and visible through their phonetic realization. [–t, +e] is the marker for the introduction of another situation of speech. The distinction between present and past is inflectionally realized by the difference between [–t, –e] (present) vs. [+t, –e] (past), which encodes a distance-relation as Bredel & Lohnstein (2001) propose on the basis of Thieroff's (1992) analysis.[17] A similar distinction is drawn by Ritter & Wiltschko (2009), who employ a feature *Coincidence* ([±coin]) which appears to mark the same distance relation.

Beside these components the context provides a component which is characterized by the situation that the speaker says p to the addressee. This abstract characterization of the speech event appears to be necessary for an adequate understanding why the speaker is liable in the case of root clauses. Both, the speaker (as well as the addressee) and the propositional object expressed are related to each other via the speech event in which the speaker says p to the addressee:

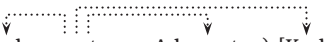
(11) The speech event *se* can be characterized as:
The speaker says p to the addressee.

Therefore, the speech event appears to us to be another component of a discourse situation. It is not part of the syntactic structure as is sometimes assumed in the literature (cf. Speas & Tenny 2003, Ritter & Wiltschko 2014, Bianchi 2017).

Under this perspective, the propositional object p is – so to say – "theta marked" by the abstract predicate 'say' given through the situation of speech. Every speech event is characterized by this abstract description. As a consequence: All root clauses are 'embedded' under this abstract predicate and connect the content of the propositional object p to the speaker x in context c. This assumption parallells root clauses with clauses embedded under attitude verbs:

17 Under this perspective, the difference between present and past reduces to the more general *distance relation*. Why this distance is interpreted as *temporal*, has to be determined by other systems of conceptual interpretation.

(12) a. root:
abstract θ-marking



(Sprecher sagt zum Adressaten) [Karl **kommt** morgen].
(speaker says to addressee) Carl comes tomorrow
'Carl will come tomorrow.'

b. embedded:
θ-marking

(Maria sagt Peter,) [Karl **kommt** morgen] / [dass Karl morgen **kommt**].
Mary says Peter Carl comes tommorrow / that Carl tomorrow comes
'Mary said to Peter that Carl will come tomorrow.'

We abbreviate this context component with 'se' – the speech event. It is a further component of c. We will return to this point in section 4. There we argue that V2 clauses under attitude verbs behave entirely equivalent to V2 root clauses with the only exception is that the attitude verb is responsible for the T-marking, not the abstract predicate 'say'. Accordingly, the speaker is not liable for the truth of the dependent proposition, but rather the matrix subject's referent.

1.4 Inflection meets context

Returning to indicative vs. conjunctive 1 root clauses, it can be observed that (13.a) with indicative marking is a statement of the speaker in the current speech situation s in the context c, while (13.b) has an interpretation as reported speech in another situation s'.[18] The speaker reports that somebody else has said that Jack is happy:

(13) a. Hans ist glücklich.
Jack is-IND happy
'Jack is happy.'

b. Hans sei glücklich.
Jack is-CONJ 1 happy
'Jack would be happy.'

18 There are, however, two further readings. The first one comes close to an instruction for Jack to be happy. 'Jack should be happy'. Note that this is not the interpretation as an imperative clause, although the form *sei* is conjunctive 1 and imperative of 'be' at the same time. To get the other reading, imagine a wizard uttering (13.b) in a circumstance in which he makes Jack (from now on) be happy. In both readings Jack should change his disposition to happiness. In the first reading he should care about himself, while in the second reading the wizard takes care of that.

In any case, with (13.b) the speaker in the current situation of speech s refers to another situation s' in which some other speaker said 'Jack is happy'. Therefore, the conjunctive 1 induces a relation '$\rightsquigarrow_m$' between the current s and another one s'. We write this *modal relation* in a similar fashion as we write the temporal relation: s $\rightsquigarrow_m$ s'.[19]

To characterize the conjunctive 1 in German, it appears to be necessary to refer to some other situation. In the case of the reportive conjunctive 1, this situation s' has to be different from s and contains its own speaker. As Fabricius-Hansen & Sæbø (2004: 215) put it: "The RS clause is (in the same sentence or in the preceding context) the object of a verb of saying (claiming, asking, commanding), *or it is understood as if it were*." (RS: reportive subjunctive). They analyse examples of the kind in (13.b) by means of a presupposition about the existence of another context of speech. The analysis proposed by Schlenker (2000) uses a logophoric world variable in order to treat the conjunctive 1 in German. But in the case of (13.b), there is no element, which could bind this variable. Another account was proposed by von Stechow (2004), who assumes that the matrix verb binds the respective world and time variables inside the embedded clause. Still, this approach also fails in cases like (13.b), since there is no matrix structure containing a verb. Hence, Fabricius-Hansen & Sæbø (2004) assume the other situation of speech to be a presupposition possibly accommodated.

There are various constructions revealing that another context of speech is required for a proper interpretation of clauses marked with conjunctive 1 as (14) shows (cf. Lohnstein 2000: 103, Schlenker 2000: 52):

(14) a. Ich glaube, dass Hans glücklich ist / *sei.
I believe-PRES that Jack happy is-IND / is-CONJ1
'I believe that Jack is happy.'

b. Ich glaubte, dass Hans glücklich ist / sei.
I believe-PAST that Jack happy is-IND / is-CONJ1
'I believed that Jack was happy.'

19 Schlenker (2003: 32) proposed that verbs of saying and attitude reports introduce a variable c' for a context which provides the relevant components of the act of attitude holding or speaking the current speaker reports:

a. Say⟨Carl, now, actually⟩ c' arrived (agent(c'), time(c'), world(c'))
↑
context of the
reported speech act

With a 1-st person subject in the matrix clause marked with indicative present an embedded clause containing indicative present is possible, but not an embedded clause containing conjunctive 1 as shown by (14.a). One reason for the interpretational failure of (14.a) is due to the fact that the indexical 'I' has to be interpreted in s as the speaker of the whole clause as well as the holder of the believe in s' at the same time. Since the conjunctive 1 requires another situation the speaker and the believe holder must be the same person in two different situations at the same time, since present tense is used. Therefore, if the time of speaking and the time of believing are identical, but the situations have to be different (because of the use of the conjunctive 1), the referent of 'I' has to exist in two different situations at the *same time*, which is of course not possible. As a result, the interpretation fails.

If past tense is used in the matrix clause, 'I' again refers to the speaker. But, as witnessed by (14.b), the situation of believing is at a (temporal) distance to the speech situation. The conjunctive 1 appears to be licenced, because the situations s and s' are (temporally) dissociated, so 'I' can refer to the speaker in s as well as to the believe holder in s'. These referents can be the same individual, because s and s' happen to exist at *different times*. So, if the two situations are dissociated, identity of the reference of 'I' is possible.

Another interesting case in point concerns the difference between direct (15.a) and indirect (15.b) speech as Kaplan (1989: 511) cites from a remark by Rudolf Carnap[20]:

(15) a. Karl_i sagte: ‚Ich_i bin ein Narr'.[21]
Carl_i said: I_i am-PERS1-IND a fool
'Carl said: I am a fool.'

b. Karl_i sagte, ich_{Sp} sei ein Narr.[22]
Carl_i said I_{Sp} am-PERS1-CONJ1 a fool
'Carl_i said I_{Sp} was a fool.'

c. Karl_i sagte, er_i sei ein Narr.
Carl_i said he_i be-PERS3-CONJ1 a fool
'Carl_i said that I_{Sp} was a fool.'

20 Note that neither the colon nor the comma are pronounced in spoken language. It may however be, that a short pause between matrix and dependent clause is required in cases of direct speech like (15.a).

21 In contrast to indirect speech a different context c' is introduced here: one with e.g. its own pronominal references.

22 While (15.a) introduces an alternative context c', (15.b) is bound to the pronominals references of the matrix clause context c, even with the introduction of another situation of speech s'.

d. Karl_i sagte, dass ich_{Sp} ein Narr bin/sei.
Carl_i said that I_{Sp} a fool be-PERS1-IND/PERS1-CONJ1
'Carl_i said that I_{Sp} was a fool.'

e. Karl_i sagte, dass er_i ein Narr ist/sei.
Carl_i said that he_i a fool be-PERS3-IND/PERS3-CONJ1
'Carl_i said that he_i was a fool.'

In (15.a) the indexical 'I' refers to the subject referent of the matrix clause *Carl*, if the embedded verb is marked with indicative and leads to a direct speech act, thus inducing pronominal references different from the following examples. In (15.b) 'Ich' ('I') refers to the speaker in the current situation of speech, while in (15.c) the pronoun 'er' ('he') refers to the subject of the matrix clause *Carl* – both cases of indirect speech. In the C^0-introduced clauses in (15.d) the difference between indicative or conjunctive 1 does not take any effect with respect to the reference of 'he'.[23] Except for the first example all share the same context in which pronominal references are assignated, even if another situation of speech is introduced via the use of conjunctive 1.[24]

Another interesting effect concerning embedded conjunctive 1 clauses was observed by Thieroff (1992: 251f) and Eisenberg (1994: 131): If the matrix verb of a main clause is ambiguous between a factive and a verbum dicendi reading, and the embedded clause is inflectionally marked with the indicative as in (16.a) both readings are available. If the embedded verb is marked with the conjunctive 1 as in (16.b), only the dicendi reading is available. The German verb *berichten* (*to report*) is a case in point and allows for both readings with the indicative, but loses the factive reading if used with the conjunctive 1:

(16) a. Karl berichtet, dass Hans glücklich ist.
Carl reports that Jack happy is-IND
'Carl reports that Jack is happy.'

b. Karl berichtet, dass Hans glücklich sei.
Carl reports that Jack happy is-CONJ 1
'Carl reports that Jack is happy.'

Thieroff (1992: 251f.) and Eisenberg (1994: 131) ascribe the property of being a marker of non-factivity to the conjunctive 1. This effect rests on the requirement

23 Note that the pronoun 'er' ('he') has an anaphoric interpretation, only, if it is unaccented. If it bears an accent, only a deictic interpretation is possible. This means that it refers to a third person, which cannot be the speaker nor the matrix subject's referent.
24 The same applies to the interpretations of deictic adverbials like *here, now* etc.

that another context is introduced through the conjunctive 1 in which the embedded proposition is evaluated. Given that the interpretation of the conjunctive 1 presupposes the existence of another situation, its use induces a shift from s to s'. Since the world(c')-component has to be different from the current world of the speech act, world(c) the factivity-presupposition of *berichten* does not project (cf. Fabricius-Hansen & Sæbø 2004). Hence, only the reading as verbum dicendi remains.

The pronominal shift, which has to take place if direct speech switches to indirect (or reported) speech, reveals that the whole set of contextually given parameters need to be accommodated so that they fit from the perspective of the other context. Thus, changing the perspective from direct to indirect speech requires the use of other pro-forms:

(17) Karl sagte ...
Carl said ...

I	be-PERS1-IND	now	here	arrived	
ich	bin	jetzt	hier	angekommen.	
↓		↓	↓		} pronominal shift in the reported speech
er	sei	dann	dort	angekommen.	
he	be-PERS3-CONJ1	than	there	arrived	

To sum up so far: Propositional objects need to be anchored with respect to some context; current context of speech c, or a context with a newly introduced situation of speech s' or the context of believe of some other person. A context c consists at least of the following components ⟨x, t, w, se⟩ (a speaker, a time, a world, and a speech event). The pronominal shift phenomena indicate that a context comprises a considerable amount of other components and that the conjunctive 1 does not simply shift the interpretation to another context, but anchors it to another situation s'. We do not want to go into these matters any further here, but point out that in order to capture imperatives the addressee is definitely a necessary context component. That components like the common ground (Stalnaker 1978), the discourse table (Farkas & Bruce 2010) (to which we return), and knowledge ascribed to other individuals talked about in the discourse need to be handled in order to adequately describe the pertinent interpretational effects are left out for the purposes of this contribution.

Next, we deconstruct the notion *assertion* in order to relate the inflectional properties discussed in this section to the (possibly assertive)[25] properties of declarative clauses. We will not deal with interrogative and imperative clauses in

25 We are rather careful with this characterization, since—as Jacobs (in this volume)—proposed convincing evidence that there is no need to assume declarative clauses to be assertive in the strict sense.

this paper, since the general treatment exemplified by means of the V2 property of declarative root clauses is directly related to interrogative and imperative root clauses. For a detailed examination of these cases cf. Lohnstein (2020).

2 On assertion

Having seen in the last section that contexts are required to treat root as well as embedded clauses, we now turn to (declarative) root clauses and scrutinize their generally supposed property of being *assertive*. In order to do so, let us first take a closer look on what an assertion is taken to be in the literature.

At first sight, an *assertion* is a direct and explicit expression of what the speaker believes to be true. As such it has to be contrasted with *presupposition* and *implicature*, but we do not want to go into these matters here. Instead, we want to look at some prominent characterizations and representations of assertoric force in clausal structures.

The first approach characterizing *assertoric force* is Frege's (1879) *Begriffsschrift* which introduces the vertical dash '|' representing the judgment and the horizontal dash '–' representing the content, the truth of which has not been judged. The sign '⊢' is composed of both symbols whose meaning Frege circumscribes as *the content is uttered with assertoric force*. Frege's approach takes the *progression from the thought to the judgment* and its expression as a three step derivation: *thinking* (grasping a though) – *judging* (acknowledging its truth) – *proclaiming* the judgment. With respect to this view the main act of assertion is the judgment by the speaker.

This act of judging is an *individual epistemic act*. It becomes a *social act* together with its commitments of truth by its proclamation.

Austin (1962) and Searle (1969) take up these ideas and implement them in their theory of speech acts. In particular, Searle (1975) characterizes assertives in the following way:

"*Assertives*. The point or purpose of the members of the assertive class is to commit the speaker (in varying degrees) to something's being the case, to the truth of the expressed proposition. All of the members of the assertive class are assessable on the dimension of assessment which includes *true* and *false*. Using Frege's assertion sign to mark the illocutionary point common to all the members of this class, and the symbols introduced above, we may symbolize this class as follows:

$$\vdash\!\downarrow B(p)$$

The direction of fit is words to the world; the psychological state expressed is Belief (that *p*)." Searle (1975: 12)

Here, Frege's judgment dash is used together with the symbol ↓ signalling the direction of fit which goes from words to world – the words have to match the world.

Bach & Harnish (1979: 41) give an encompassing classication of communicative illocutionary acts reorganizing Austin's and Searle's arrangements. They treat assertions as constatives which express the speaker's belief and his intention that the hearer should have a the same belief. In a situation of speech with a speaker S and a hearer H an assertion is defined in the following way:

(18) Bach & Harnish (1979: 42)
In uttering *e*, *S* asserts that *P* if *S* expresses:
a. the belief that *P*, and
b. the intention that H believes that *P*.

In this specification the judgment is not an explicit part, and only its result, the believe that *P*, is mentioned (18.a). The epistemic act of judging dwindled away. The second part charactizes the intention of S to transfer *P* to the believe system of H.

In a more rigorous way Krifka (2014) even abandons the 'believe' component, so that the epistemic dispositions of the speaker do not play any role at all. Instead, he uses an assertion operator ASSERT. Crucial for Krifkas definition of this opertor is that the speaker is liable concerning the truth of the expressed proposition (Krifka 2014: 68f):

(19) To express assertional mood, we will make use of an assertion operator, ASSERT. It takes an index i, an addressee variable y, a proposition p and a speaker variable x, and yields the value True iff at i, x is liable for the truth of the proposition p to the addressee y.
a. ASSERT(i)(p)(y)(x) ⇔ at i, the speaker x is liable for the truth of p at the index i towards the addressee y.
Notice that ASSERT is a state predicate; it denotes the state of being liable for the truth of a proposition.

In a similar fashion Gärtner & Michaelis (2010) assume that the speaker commits himself to the truth of the expressed proposition to be the main property of an assertion. Although they use the symbol '⊢' to designate this logical relation, they do not focus on Frege's act of judging:

(20) a. $[_{FP}$ Op $[_{\overline{F}}$ F^0 $[_{CP}$ In Berlin$_i$ $[_{\overline{C}}$ schneit$_j$ [IP es t_i t_j]]]]]
b. FP hosts a force operator, OP, translateable as $\vdash_S$ in the case of declaratives.
$\vdash_S\Phi$ abbreviates 'S asserts Φ'

As Gärtner & Michaelis (2010: 16f) put it, the meaning of (20.a) is: "a speaker S commits himself (under normal circumstances) to the assumption that it is snowing in Berlin". Again, the individual epistemic act of judging does not play a role in the characterization of the assertion.

In a more recent study, Sode & Truckenbrodt (2018) assume two features [±origo] and [±pref] with the following interpretations:

(21) a. [+origo] requires ⟨x,w,t⟩ to be the origo
b. [–origo] requires ⟨x,w,t⟩ not to be the origo
c. [+pref] stands for $\text{WANT}_{x,t,w}$
d. [–pref] stands for $\text{BEL}_{x,t,w}$

The feature [origo] is used to discriminate the current situation of speech from a reported situation of speech. The feature [–pref] receives the interpretation $\text{BELIEVE}_{x,t,w}$, while the feature specification [+pref] leads to a $\text{WANT}_{x,t,w}$ component. The respective meaning paraphrases are: a speaker x_ci in context c_i BELIEVES / WANTS at time t_i in world w_i that p. Accordingly, "an ordinary assertion in V2 form [...] is the expression of a [+origo]-belief, i. e. an expression of what the speaker believes at the speech time in the world of the utterance" (Sode & Truckenbrodt 2018: 25). On the basis of these distinctions Sode & Truckenbrodt assume a lexical entry for an abstract complementizer attracting V-to-C-movement with the following components:

(22) $[_C[c_i]$[pref][origo], §].

The feature § is responsible for the attraction of the finite verb to C, since Sode & Truckenbrodt employ a probe goal system in the sense of Chomsky (2000, 2001) and Adger (2003) for movement of the finite verb. They assume the lexical entry in (22) for the abstract complementizer (without phonetic content) to explain the variation between the sentence moods of root clauses in German.

In our opinion, which is largely based on the perspective of the hearer, silent material (at the left periphery) should be avoided. Especially when different kinds of information need to be discriminated, the assumption of silent operators transforming semantic objects appears to be rather suspect. It seems to us that BELIEVE- and WANT-components merely reflect epistemic or bouletic states of the human mind. But these states do not appear in the language system in a direct manner (except, of course, in the case of lexical items). The feature § Sode & Truckenbrodt (2018) assume is supposed to exist for the theory internal reason to serve the probe goal mechanics, as far as we see. We would like to present another motivation for verb movement.

To our understanding a context is given independently of any grammatical structure. It is determined by a speaker x, at some time t, in a situation that is part of a world w and the speech event se together with components relevant for the interpretation of indexicals and enriched with the information states of the discourse participants, and the individuals talked about. One task of the language system consists in connecting the grammatical structure to the context in which it occurs. After all the question is still, how a context is connected to a specific grammatical structure. We take the informal idea proposed by Rizzi (1997: 283), who assumes the C-system to be an interface between the propositional content of a clause and a structure of a higher order (matrix clause or discourse) to be correct. In this line of thinking, root clauses have to be connected to the discourse and embedded clauses have to be connected to a matrix in the first place.

Then, we can assume for the purposes of this paper that lexical complementizers accomplish this connection via their lexical specifications, so that we can focus on the V2 constructions in German. We now want to elaborate the idea proposed by Lohnstein (2020) that V2 occurs for reasons of valueing the deictic features of finiteness, which in the root cases occurs via anchoring in the discourse context.[26]

As we have seen in section 1, the tense component has a variable for the time of speech missing a value. In a similar way, the mood component has a variable for the situation of speech, and this variable has no value either. Then, we assume, the trigger for verb movement relies on the unvalued features of the components of finiteness – tense and mood.

If we assumed a probe goal system in the sense of Chomsky (2000, 2001) or Adger (2003), the probe would happen to possess these unvalued features and fronting of finiteness occurs to value them. Considering tense and mood, this is not the case. These categories bear the unvalued features themselves, i. e. they belong to the moved element which is the goal. So, from our perspective it does not seem beneficial to assume a probe goal mechanism to explain verb movement. Instead, we want to argue that the deictic variables of finiteness necessitate information which is availabe in the context of speech only. These kinds of information have to be obtained in the C-interface, and that is the reason, why the positions in the C-system get occupied. In accord with the assumptions worked out in the literature (cf. Kaplan 1989, Schlenker 2003, Eckardt 2014, Sode

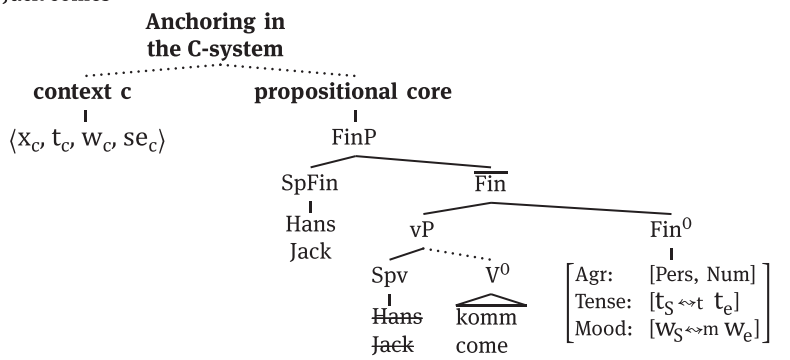
26 We will explore this mechanism for embedded V2 clauses with corresponding implications and further differentiations in section 4. In cases of embedded verb final clauses these features get values from the root clause via the connection the complementizer establishes.

& Truckenbrodt 2018) a minimal set of context components appears to be necessary: $\langle x_c, t_c, w_c, se_c \rangle$.[27]

Since *tense* requires the time of speech, and the meaning of *verbal mood* is constituted as a function of the current context of speech (or evaluation world), fronting of finiteness serves the purpose to leave the propositional core in order to get access to the contextually given information. So, what has to be explained is the process of connecting the propositional core of a sentence with the structure of a higher order (Rizzi 1997) by means of the inflectional categories. The following scheme condenses the relevant aspects:

(23) a. Hans kommt.
Jack comes

b.



Thus, in a case like (23.a) the fronting of the finite verb into the C-System allows tense and mood to get access to the context components t_c and w_c to value the otherwise unvalued variables of tense (*time of speech*) and verbal mood (*world of speech*) (indicative and conjunctive 2).[28]

Assume an event structure like (24.a) for the sentence in (23.a). And assume further that the fronting of finiteness with the variables t_S and w_S, which do not have values, leads to λ-abstraction through movement into the C-system as in (24.b). Then, λ-conversion with the context values t(c) and w(c) yields (24.c) in the manner of the calculation in (24.b):

27 We do, however, focus on situations s in w in cases of conjunctive 1.

28 We will explore the consequences for unvalued features due to lack of fronting of finiteness in contexts of disintegrated sentences in section 5.

(24) a. $\lambda e[come(e) \,\&\, Agent(e)(Jack) \,\&\, \boxed{t_S} \leftrightsquigarrow_t t_C \,\&\, \boxed{w_S} \leftrightsquigarrow_m w_C]$

b. **discourse anchored propositional object**

$\lambda e[come(e) \,\&\, Agent(e)(Jack) \,\&\, (t_c) \leftrightsquigarrow_t t_e \,\&\, (t_w) \leftrightsquigarrow_m w_e]$

context — **propositional object**

$\langle x(c), (t_c), (w_e)\rangle$ $\quad \lambda t_S \lambda w_S . \lambda e[come(e) \,\&\, Agent(e)(Jack) \,\&\, \boxed{t_S} \leftrightsquigarrow_t t_e \,\&\, \boxed{w_S} \leftrightsquigarrow_m w_e]$

c. $\lambda e[come(e) \,\&\, Agent(e)(Jack) \,\&\, (t_c) \leftrightsquigarrow_t t_e \;\&\; (w_c) \leftrightsquigarrow_m W_e]$

Assigning the values t_c and w_c given as components of the discourse context c as values to the unvalued variables t_S and w_S, we receive the propositional structure in (24.c) which is anchored in the discourse context c. This process occurs if the finite verb is fronted into the C-system. The propositional object in (24.b) is still a biparition, i. e. the object corresponding to a yn-question, which is now anchored in the discourse situation. Because it is anchored in the discourse situation the question is *posed*.

As a remark, the composition in (24) as well as the features in Fin^0 in (23.b) are greatly simplified. What is required is a more fine grained distinction between conjunctive 1 and conjunctive 2 and the respective values that need to be assigned. For conjunctive 1 this is the context albeit with an additional situation s', while for conjunctive 2 it is only the world variable. For the general idea we want to propose here, the exposition in (24) may be sufficient. Note, that up to now, only fronting of finiteness has taken place. An extension to the analysis of V2 takes place in the next section.

We sum up the particular aspects of fronting finiteness examined so far and formulate the following principle:

(25) Anchoring principle (semantics)
Fronting of finiteness occurs for the reason to value unvalued variables of the inflectional categories *tense*, *mood* and *agr* by components of the discourse context. This process anchors the propositional object (semantically) by binding variables to context components.

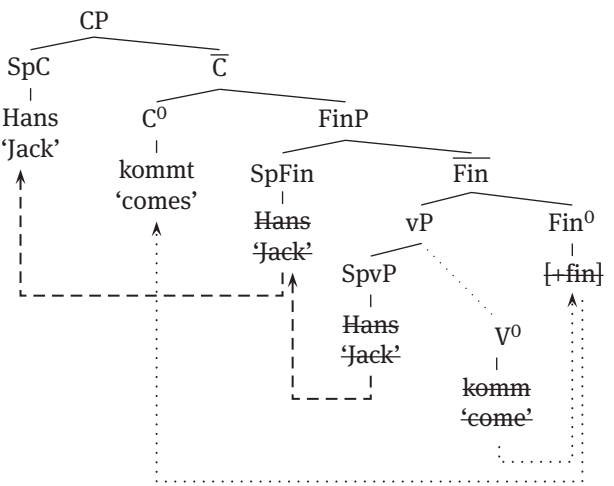
2.1 Modelling the judgment

Assume next the thought in Frege's sense to be a bipartition of event descriptions as derived in (24.c): one class of descriptions matching the event, the other class not

doing so. As Frege (1919/1966: 35) put it, the grasping of a thought corresponds to the formation of a yn-question. This is, in terms of question semantics (Groenendijk & Stokhof 1982, 1984, Ciardelli, Groenendijk & Roelofsen 2013) a biparition of the possible states of affairs (a set or its characteristic function). Every state of affairs correctly described by the proposition is in the set (or mapped to true). Every state of affairs not included in the set fails to match the proposition and is mapped to false.

Consider next the operation *merge* of a [–wh]-phrase to the structure derived by finiteness fronting. It places this phrase in the position usually called the specifier of CP as the dashed arrows in (26) indicate:

(26)



Merging a [–wh]-phrase to the position labeled SpC turns the yn-interrogative in (24.b) into a declarative clause. How does this happen? One way to achieve this is to interpret merge of an XP to SpC as the application of a choice function. This function is of logical type ⟨at,a⟩ taking an argument of type ⟨at⟩ which is a set of elements of type ⟨a⟩ (for instance the set in (24.c)) and maps it to a single element of that set (some event). The select operation returns an element of the (non-empty) set from which its existence follows.[29] The λ-expression in (27.a), then, turns into the existentially quantified formula in (27.b), which can be interpreted as a representation of the declarative clause. It says that the event exists (cf. already Brandt et al. 1992):

(27) a. $\lambda e[\text{come}(e) \;\&\; \text{Agent}(e)\;(\text{Jack}) \;\&\; {}_{tc} \rightsquigarrow_t {}_{te} \;\&\; w_c \rightsquigarrow_m w_e]$
b. $\exists e[\text{come}(e) \;\&\; \text{Agent}(e)\;(\text{Jack}) \;\&\; {}_{tc} \rightsquigarrow_t {}_{te} \;\&\; w_c \rightsquigarrow_m w_e]$

29 For details about the operation cf. Lohnstein (2020).

The step from (27.a) to (27.b) reflects Frege's progress from the thought to the judgment. (27.a) represents the thought, an undecided bipartition, while (27.b) represents the judgment that the expressed state of affairs exists.

The semantic processes corresponding to the syntactic processes of fronting finiteness and merge of a [–wh]-phrase in front of it do not only provide a formal derivation of Frege's progress from the thought (yn-question) to the judgment. This furthermore explains the difference between root and dependent clauses. Root clauses are anchored in the discourse situation, while dependent clauses are not. The derivation makes crucial use of the properties of tense and mood as inflectional categories together with their deictic variables. These variables bind components of the discourse context via their movement out of the FinP into the C-system. The two components (discourse and proposition) combine in the C-interface (cf. Rizzi 1997) by means of the features of the inflectional categories *tense* and *mood*.

3 On proclaiming and at-issueness

Frege (1919/1966: 35) characterized an assertion as the progress from the thought to the judgment together with its proclamation.[30] From this point of view the component of judging is the relevant property of an assertion. This act is performed by the speaker. It is an individual (not a social) act. Since the difference between questions and judgments is determined through truth conditions, we assume the act of judging to be *semantic* in nature. As opposed to that, being liable for the truth of a proposition is a social commitment, which comes into existence if a speaker proclaims a judgment to some addressee. Without an addressee commitments do not arise. We therefore assume the commitment to the truth of a proposition to be a *pragmatic* property.

To be a bit more precise, let us look at an explicit discourse model which allows the explication of the consequences of anchoring a propositional object in a discourse context. Farkas & Bruce (2010) introduced the *discourse table* which can be considered the location where the discourse participants negotiate the knowledge they are (un-)willing to accept. In this model, they distinguish a speaker speaker A, speaker B and the discourse commitments they bring along. These are two sets DC_A (speaker) and DC_B (hearer) (DC = discourse commitments). The model also contains the common ground (cf. Stalnaker 1978), which contains the propositions speaker and hearer assume to be true. A *projected set* contains the possible continuations of

30 He distinguishes three acts: thinking – judging – expressing. To capture a thought in his analysis means to shape a thought, judging leads to the approval of the truth of the thought, and proclaiming refers to the expression of the judgment. Lohnstein (2000, 2020) relates the three acts proposed by Frege to characterize the semantic objects representing sentence moods.

the discourse and describes priviledged future states of CG. A declarative sentence e.g. leads to a projection in which the respective proposition p is added to the CG.

(28) (Simple) Model of a context structure (Farkas & Bruce 2010: 89):

A	**TABLE**	**B**
DC_A	S	DC_B
Common Ground cg	**Projected Set** ps	

Fronting of finiteness together with the binding of the deictic variables to context components lead to the placement of the respective propositional object onto the discourse table. This is where these objects get their relevance for the speaker and the hearer. Having an empty table is the (idealized) target situation of every discourse – a question is answered completely, assertions are accepted by the discourse participants and have entered the common ground etc. Objects on the table are *at-issue* (Potts 2005, Antomo 2012, 2015, Antomo & Steinbach 2010, Reis 2013). *The table* (Farkas & Bruce 2010) as a manifestation of *the question under discussion* requires the elements on it to have the properties just discussed. Speaker and hearer have to care about these objects. Antomo (2015) assumes (embedded) verb second as an optional marker for at-issueness. Given that this correlation holds, the theory proposed here formulates the *grammatical basis for at-issueness*. We lay down the connection between *context anchoring* and *discourse table* by means of the following principle:

(29) Achoring principle (pragmatics)
Propositional objects anchored (semantically) in the discourse situation by (syntactic) fronting of finiteness are put onto the discourse table.

This principal claims that binding the deictic variables of tense and mood to components of the discourse context enabled by the syntactic process of fronting the finiteness places the respective propositional objects on the discourse table. Here they receive their social relevance and unfold their illocutionary force dependent on the presence of speaker and hearer and the environmental circumstances. Being on the table, their conversational status is under discussion (answered, negotiated, ...). Whatever kind of pragmatic interpretation they receive, they are *at-issue*.

Thus, if uttered, a verb second declarative root clause is put on the table. The speaker is obliged to the commitment that the expressed judgment of p is true. The hearer is not committed to anything. Hence, DC_B remains unspecified. But the hearer has two options to behave with respect to the utterance of p. He can believe p, then p is added to the common ground, and the table is empty; or he

can reject p (claiming ¬p), in which case the issue has to be discussed further. The projected set contains the possible continuation that p is added to CG[31]:

(30) a. Hans **ist** gekommen.
Jack is come
'Jack came.'

b.

A	**TABLE**	**B**
p	p: Jack came	DC_B
Common Ground cg	**Projected Set** ps = {s ∪ {p} }	

As stated in section 1 the deictic variables get valued by the matrix in embedded sentences. The proposition of the subordinate sentence is anchored in the context provided by the matrix predicate. Tense and mood therefore indicate relations to time and situation of the reported (se_r) instead of the current speech event (se_c). To interpret these instances of V-to-C as assertive anyway would implicate that their propositions are anchored in discourse and not in the matrix. We will address this problem in the upcoming section.

4 Embedded V2 under attitude verbs

Applying our understanding of V2 declaratives we will scrutinize embedded cases to test the hypothesis that assertive force – and thereby an illocutionary force – necessarily accompanies these structures. Meinunger (2004) has suggested that the proposition of the V2 sentence under certain embedding verbs may be interpreted as being part of the believe of the matrix subject as well as the speaker's believe. His double access reading (DAR) analysis was restricted to predicates that only licence indicative verbal mood in the embedded sentence:

(31) Karl weiß, Hans ist glücklich.
Carl knows Jack is happy
'Carl knows that Jack is happy.'

An embedded V2 sentence like (31) would be interpreted as being an assertion concerning the believe system of Karl as well as a speaker assertion under his

31 In Farkas & Roelofsen (2017), and Lohnstein (2020) discourse table configurations are proposed for other clause types and sentence moods.

assumption. We will try to determine if such an interpretation can be extended to all cases of embedded V2.

As we have seen with respect to (3) the proposition of the subordinate sentence without V-to-C movement receives its values for time and world from the superordinate predicate via the complementizer. In case such a complementizer is absent which has to be dropped in these V-to-C instances, one could assume that the proposition gets anchorched in the context in a fashion parallel to root sentences. Assigning the values for time and situation and applying the choice function via merge XP would correspond to an interpretation as assertion in the current discourse situation.

The following example may point in that direction as a speaker assertion of Mary's current pregnancy clashes with a referential adverbial assigning a time to the believe event that is contradictory to human pregnancies.

(32) *Karl glaubte vor zwei Jahren, Maria ist schwanger.
Carl believed ago two years Mary is pregnant
'Carl believed two years ago that Mary is pregnant.

In (32), the variables of time and situation would receive values identical to the time and situation of the current speech event, even though the superordinate predicate indicates a temporal distance to the believe event. The indicated distance of the believe event and an assertion of the embedded proposition would then lead to the effect in (32).

But the same seems to apply for examples where the said variables receive their values from the matrix predicate.

(33) *Karl glaubte vor zwei Jahren, dass Maria schwanger ist.
Carl believed ago two years that Mary pregnant is
'Carl believed two years ago that Mary is pregnant.'

The embedded proposition is not anchored in the discourse situation but the utterance is still compromised. Therefore the effect in (32) does not seem to originate from an anchoring in the discourse.[32] Consequently, an analysis on the basis of DARs should not be dismissed readily.

The DAR analysis proposed by Meinunger (2004) pertained to the interpretation of the proposition under an operator ASSERT. However, within our expanded application the interpretation of the embedded sentences as speaker assertions is

32 Note that the use of conjunctive in the embedded sentence in (32) and (33) generates an acceptable outcome.

not compatible with the speaker's possibility of distancing himself from the truth of the proposition. As shown in (34) the latter is a valid conversational move for the current speaker (sp_c).[33]

(34) Karl glaubte, Hans ist glücklich. Heute weiß er es besser.
Carl believed Jack is happy Today knows he it better
/ ?Ich bin derselben Meinung.
/ ?I am the same opinion
'Carl believed that Jack is happy. Today he knows better. / ?I share this view.'

The speaker should not be able to distance himself immediately outside adversative contexts if the embedded V2 was asserted in a parallel fashion to root clauses. But if we take V-to-C to be a mechanism that enables the value assignment for the time and situation/world variable in the first place, another analysis may be available.

During the original speech event (the time of event) the common ground (CG_r) of the participating speaker and addressee(s) does not yet include a settled judgment about p.[34] The described assertive effect seems to arise as soon as the common ground of the reported speech act and the CG of the current speech act are identical with respect to the proposition of the embedded clause. If no temporal distance is implied with respect to the believe event, to assume a DAR seems much more acceptable than in (34), but still it is not obligatory.

(35) Karl glaubt, Hans ist glücklich. Ich denke das auch. / Was
Carl believed Jack is happy I think that too / What
für ein Unsinn.
for a nonsense
'Carl believed that Jack is happy. I agree. /Nonsense.'

We assume a DAR in line of what Abusch (1997) suggested. She describes an necessary overlap concerning the proposition's validity for the time of utterance (se_c) and the time of the believe event (se_r). Our understanding of DARs also pertain to the assignment of values for the time and situation variables. We do however separate this mechanism from the assertive function. While the embedded proposition is anchored in the discourse, this does not necessarily imply that the speaker is also the one asserting it, like suggested by a DAR under an assertion operator. Instead the context variable for the speaker is replaced by the speaker

33 vs. the speaker in the reported speech event (sp_r)
34 In the Fregean sense, the judgment of a proposition requires the judgment not to be processed beforehand.

of the original speech act sp_r, the current agent. The liability concerning the adequacy of the proclamation of judgement does not lie with the current speaker with respect to the embedded proposition.

DARs in this sense are available if the CG_r and CG_c are identical with respect to the concerned proposition p.[35] Both instances of common ground albeit having different participants indicate that the truth of the proposition has not been judged by the respective participants when the speech events occur. The reported speech event took place in a context that allowed the proposition to be asserted by the original speaker.[36]

Why should the implication of an assertive speech act in a reported speech situation be relevant? A speaker could use the reference to the judgement of another to contribute to the judgment about the truth of a proposition without being committed to its validity. After all, if one asserted the proposition in question, the social setting would lead to a commitment about its truth, even if the judgment was not based on definite knowledge.

(36) Function of embedded V2 and attitude verbs
The reference to another speech act with another speaker burdened by commitment may be a strategy to be informative without being liable.

V2 in complement clauses offer the current speaker a way to adhere to the maxim of quality while keeping the maxim of relevance in mind.[37] These conversational (and pragmatic) requirements may lead the speaker to syntactically anchor the proposition of the complement clause in the discourse, but at the same time imply that the proposition in question has been put on the table and judged by someone else in a different speech situation. The current speaker then uses the reference to this preceding speech situation to answer the current question at hand.

How can this intuition be derived formally? As we have seen in (11), root clauses are "theta-marked" by the situationally given abstract predicate *say*, which relates the propositional object expressed through the clause to the speaker. The crucial difference to embedded clauses consists in the fact that

35 Cf. Abusch (1997: 39ff.). Abusch states that the symptoms of a potential pregnancy have to be existent at both times, at the time of the reported believe event and at the time of utterance.
36 V-to-C here is only available if the semantics of the embedding predicate would allow the original speech event to be an assertive speech act by the original speaker (sp_r). Truckenbrodt (2006: 288) assumes that V2 predicates are semantically linked to the belief of the sp_r. If the current speaker is to know about this belief, he has to have witnessed it. We assume that reports of belief, thinking, hoping and so forth imply that there has been some form of externalization of these mental states.
37 The requirement of being part of a pragmatic setting only arises if an addressee is present.

embedded clauses are theta-marked by the matrix predicate, which relates them to the matrix subject. In the case of embedded V2 complement clauses, the tense and mood variables are bound just like in root clauses, so that through the principles in (25) and (29) they are placed on the table. But the burden of commitment is not on the side of the speaker, because of theta-marking by the matrix predicate. The process of fronting finiteness has therefore exactly the same effect as in root clauses, with the exception that the speaker is not liable, but gives the information in the name of the matrix subject's referent. Thus, a V2 complement clause places the propositional object on the table just as liable as in the case of root clauses. The only difference consists in the theta marking element abstract *say* (root clause) vs. matrix predicate (embedded clause). The embedded propositional object is therefore placed on the table via V2, but the speaker is not liable for its truth, because of the theta-marking by the matrix predicate. This is exactly what the more informal characterization in (36) enunciates. Correspondingly, we receive two different configurations of the discourse structure:

(37) embedded verb-final clause:

a. Karl glaubt, dass Hans glücklich ist.
Carl believes that Jack happy is
'Carl believes that Jack is happy'

b.

A	**TABLE**	**B**
p	p = believe(Carl, Jack is happy)	
Common Ground cg	**Projected Set** ps = {s ∪ {p}}	

In (37) the speaker is committed to the whole proposition p (believe(Carl, Jack is happy)) and the addressee can accept this proposition or not, but the projected set contains p as the prefered possible continuation.

In contrast, the root and the embedded V2 clause enter the table as distinct propositions p_1 and p_2 in (38), but the speaker is committed to p_1 only. He is not liable for the truth of p_2, since p_2 is theta-marked by 'believe' with a differing value for the speaker variable of the embedded sentence's context. P_2 enters the table because of its V2 structure governed by the principles in (25) and (29) of semantic and pragmatic anchoring:

(38) embedded V2 clause:

a. Karl glaubt, Hans ist glücklich.
Carl believes Jack is-IND happy
'Carl believes that Jack is happy'

b.

A	TABLE	B
p_1	p_1 = believe(Carl, p_2) p_2 = Jack is happy	
Common Ground cg	**Projected Set** ps = $\{s \cup \{p_1 \wedge p_2\}\}$	

Embedded V2 consequently is only available if the embedding predicate implies that there could have been an assertive speech act which is reported via the current speech event.[38] An assertive speech act requires that the proposition has not been judged in the corresponding contexts to ensure that a reduction of the bipartition may take place upon XP insertion.

Inherently negative predicates are excluded because their complements do not translate to assertions of p as original speech events. Presumably they point to an assertion of ¬p.[39] Factive predicates are connected to states of the common ground where p is presupposed and therefore part of CG_r as well as CG_c. No implication of an original assertive act is possible under these embedders.[40] The volitional *wollen* seems to illustrate this mechanism as well. It is only able to embed V2 if the matrix predicate and the verb of the subordinate sentence exhibit conjunctive 2:

(39) Karl wollte, Hans wäre glücklich.
Carl whished Jack was happy
'Carl wished that Jack was happy.'

As described in section (1.2) the use of conjunctive 2 may be used to encode counterfactual contents. The indicative is not available for the superordinate sentence as its use would lead to an anchoring of the proposition in the discourse at the current index. The semantics of the verb imply counterfactual content which therefore clashes with this course of action. Correspondingly, the volitional only allows for judgement with respect to another situation. Only then can the merge operation with an XP induce a reduction of classes. The alternative verbfinal complement is compatible with the use of indicative in all parts of the complex structure though:

(40) Karl will, dass Hans glücklich ist.
Carl wants that Jack happy is-IND
'Carl wants Jack to be happy.'

38 Tsiknakis (2016) developed a feature system which formulates the relevant conditions for embedded V-to-C movement together with [–wh]-phrases as opposed to [+wh]-phrases.
39 Cf. Truckenbrodt (2006: 297).
40 For further details cf. Lohnstein (2020).

As can be seen in (40), the embedded proposition lacks V-to-C movement, so the propositional object is not semantically anchored in the discourse. Therefore, the connection of the complement to the context does not contradict the semantic requirements of the embedder. Hence, our approach seems applicable to explain this difference in mood licencing via the assumption of discourse anchoring in the V-to-C cases. To do so, it does not analyse the embedded V2 sentences as speaker assertions. Instead we suggest an alternative strategy that under certain circumstances leads to a similar discourse update.

Apart from the semi-factive *wissen* and the perceptive *sehen* all V2 predicates allow the use of both conjunctive forms. We assume that the mechanisms are the same as with indicative predicates in the embedded V2 clauses – but with the same assumptions about a shifted speech situation as for root clauses with this mood. There just seems to lie a stronger focus on the reporting nature of the original speech event and less on the possible contribution to the current judgment process.

The analysis of embedded V2 under attitude verbs incorporated in a question or order is left for another time. Tentatively speaking, cases that feature questions still concern a potential assertion which is then not reported but itself questioned by the speaker. Orders with embedded V2 sentences seem to exhibit a very intricate mood licencing system e. g. heavily influenced by negation of the superordinate verb.

Having described the difference between complements with and without V-to-C movement, we will now examine the same issue with respect to adverbial clauses.

5 V2 adverbial clauses

Adverbial clauses in German have been found to be available in different stages of syntactical integration. Depending on their integration status they may operate on different interpretational levels.[41] Reis (2016: 313) has suggested a paratactic interpretation for the disintegrated adverbial clauses.[42] She deems them to be barely, if even at all, phenomena of embedded V2. They connect on a discourse level and are to be analyzed as being linked to the antecedent sentence in a paratactic way. She applies this analysis to versions of adverbial clauses with and without V-to-C in Reis (2013). This observation holds for all kinds of adverbial clauses independent of the conjunction. We will focus on causal clauses introduced by *weil*, but the following generalizations are applicable to the other types of adverbial clauses as well. We will apply our hypothesis to adverbial clauses

41 Cf. Antomo & Steinbach (2010) for an overview.
42 Cf. also Reis (2013, 2016).

with and without fronting of finiteness to identify if there are any differences in terms of anchoring due to the fronting of finiteness or the lack thereof.

It has been largely described in the literature that *weil* -clauses with V2 and a [–wh]-element in the prefield have assertive potential.[43] Like described for root declaratives the fronting of finiteness seems to anchor the proposition of the adverbial clause in the discourse. This leads to a validation of the concerned features through the context. The XP-insertion causes a reduction of classes and the complex operation results in a proclamation of judgment by the speaker. The specific implication of these causal versions pertain to reasons; reasons to believe a prior proposition to be true or to instantiate a speech event with the corresponding propositional content.

The laid out theory of V2 therefore seems to fit V-to-C instances in adverbial clauses. But a question that necessarily arises is how a lack of V-to-C in disintegrated adverbial clauses impact their interpretation. Reis (2013) suggests that disintegrated causal clauses without V-to-C may have the same assertive potential that the V2 versions feature. For our approach this would suggest other means of anchoring as the validation of values is necessary for a reduction to p-events characteristic for assertions. To suggest a possible explanation we will focus on contexts in which the situation of speech is not the only available context to anchor the proposition of the causal clause in.

In general the effects of disintegrated adverbial clauses have been examined in contexts in which the speaker is the sole epistemic agent. The only available context for anchoring in these cases therefore has to be the speech situation if indicative is used.[44] The possibility of distancing will be used as a measure to test in which context or, to be more specific, in whose believe context the proposition is anchored. The semantic anchoring in the discourse and the speaker's believe will lead to the assignment of commitment in the social setting, thus impacting the possibility to distance oneself from the truth of the proposition.

We have claimed that the semantic anchoring and therefore the ascribing of values to the deictic variables rely on the fronting of finiteness or a complementizer. Certain enough instances of integrated *weil*-clauses seem to be anchored to the believe system of an epistemic agent introduced by the antecedent clauses. The speaker of the current speech event therefore may challenge the truth of the proposition in a causal clause:

43 Marga Reis has pointed out in Reis (2013, 2016) that these causal clauses may very well contain V-to-C movement enabling questions and orders. Assertive versions are not the only possibilities by far. We will, however, focus on the latter at the moment.

44 As mentioned in 1.2 the use of conjunctive – primarily of the conjunctive 1 – may imply a precedent speech event being reported.

(41) Hans sagt, dass Karl nervt, **weil** der immer
Jack says that Carl annoys because he always
gelangweilt **ist**.
bored is-IND
Dabei ist Karl gar nicht gelangweilt.

'Jack says, that Carl is annoying, because he is always bored.
However, Carl is not bored at all.'

The speaker reports a speech situation and in putting it on the discourse table only commits to this report but not to any content of the reported speech act. The use of conjunctive 1 as a signal of indirect speech seems to enable such an analysis for instances for V2-*weil* -clauses:

(42) Hans sagt, dass Karl nervt.
Jack says that Carl annoys
Weil der **sei** immer gelangweilt.
Because he is-CONJ 1 always bored
Dabei ist Karl gar nicht gelangweilt.

'Jack says, that Carl is annoying. Because he is always bored.
However, Carl is not bored at all.'

As proposed in (1.2) the conjunctive 1 shifts the valuation to another situation and to the speaker sp_r of the reported speech act. This other epistemic agent is the one who presumably committed to the content of the original speech event when it was put on the discourse table. The proposition of the causal clause is therefore anchored in the context of the reported speech and the deictic variables receive values from this specific context due to the modal distance.

The use of indicative under the same circumstances generates a different outcome though.

(43) Hans sagt, dass Karl nervt.
Jack says that Carl annoys
Weil der **ist** immer gelangweilt.
Because he is-IND always bored
#Dabei ist Karl gar nicht gelangweilt.

'Jack says, that Carl is annoying. Because he is always
bored. However, Carl is not bored at all.'

In line with our arguments the use of indicative present in (43) assigns values from the current speech situation to the deictic variables. The speaker therefore proclaims his judgment due to the Ā-movement. This leads to the projection of a future CG adding the proposition p to the current CG. Concerning the discourse table, the proposition of the adverbial clause is listed in the commitment list of the speaker (DC_{sp}). Challenging the truth of the concerned proposition generates a flawed outcome. The fronting of finiteness in accord with the principles in (25) and (29) has led to the semantic and pragmatic anchoring of the proposition of the adverbial clause.

(41) showed that a lack of fronting of finiteness leads to the anchoring of a proposition in a different available context. This seems to apply to disintegrated versions of adverbial clauses as well, as distancing is an available option for the speaker:

(44) Hans sagt, dass Karl nervt.
Weil der immer gelangweilt **ist**.
Because he always bored is-IND.
Dabei ist Karl gar nicht gelangweilt.

'Jack says, that Carl is annoying. Because he is always bored.
However, Carl is not bored at all.'

This suggests that the speaker is not commited to the truth of the proposition. The disintegrated clause is not necessarily anchored in the reported speech context in contrast to the integrated clause in (41). As the disintegrated versions of adverbial clauses are interpreted as being part of a parataxis, *weil* cannot conntect to a superordinate sentence and is therefore not able to fulfill any connecting function like e.g. *dass* or *weil* in intergrated clauses. The syntactic structure correlates with pragmatic disintegration. Thus, the proposition may be anchored in the context of the current speech event as well as in the context of the reported speech event. The proposition is therefore not automatically anchored in the discourse due to the syntactical disintegration corresponding to the speaker's possibility of distancing himself. It is also not necessarily anchored to the context of the reported speech event which suggests that the causal conjunction does not function as an alternative anchoring device in these cases. The lack of V-to-C results in an ambiguous situation that allows for different context assignments with different speakers in the case of (44).[45]

45 For further illustrations of the implied structural differences and a proposal concerning the assertive like effects of disintegrated *weil* -clauses cf. Staratschek (2018).

Future research should address the question how the anchoring of a proposition works in which no complementizer in C° links it to the matrix and no V-to-C is available. Reis (2016) also refers to problems with respect to V2 in cases with a quasi-conditional function and asymmetric coordinations which will be left untouched for the moment. Concerning adverbial clauses we state that they are adequately described through our approach.

6 Summary

We started by describing the grammatical means to express temporal and modal properties. The important factor for temporal interpretation is the determination of the relation between the time of event and the time of speech. For root sentences, the time of speech is delivered through the context of discourse, while the time of event of a matrix clause is the relevant application point for sentences dependent on propositional attitude verbs. While the embedded sentence is connected to the context given by the matrix clause via the complementizer, root sentences without fronting of finiteness do not necessarily adhere to such a mapping. The connection established by the complementizer may then be one to any available context, while embedded clauses only may be mapped to contexts introduced by the superordinate clause.

In analogy to the interpretation of tense, mood relates the context of speech to another context of speech in the case of conjunctive 1, while conjunctive 2 switches the current world for the propositional evaluation to another (counterfactual) world. In both cases a shift applies: introduction of a new situation s' in the case of conjunctive 1. The shift of the evaluation world from the current world w (reality) to a counterfactual world (possibility) w' is brought about by the use of conjuntive 2.

Time, situation, and speaker as well as the speech event being essential variables in the context, we assumed that the assignment of values to these variables is governed by the same basic mechanism for root and dependent clauses. The matrix-predicate relates the dependent proposition to the speaker via usual θ-assigment in the case of propositional attitude constructions. For root clauses the respective structural relation is delivered through the speech situation itself: "the speaker says to the addressee p". In a setting like that the thematic roles are assigned by the situational configuration. We referred to this circumstance as *abstract* θ-*marking* for all root clauses. As a consequence, root clauses relate the propositional object expressed to the speaker.

We determined that vital components of a context to evaluate propositional content in are speaker, speech event, time and world. The assignment of values

for time and world depend on (the combination of) the morphemes '-t' and '-ə' in German. To connect the propositional content to the context, finiteness must be fronted which we defined as *semantic anchoring* (assigning discourse components to deictic variables). The latter can occur through the mentioned fronting of the finite features or via a complementizer through its lexical specification.

Depending on the [±wh]-features of elements in the prefield different options for the speaker emerge after the semantic anchoring: to encode an assertion, to pose a question, directing an order, etc. A [–wh]-element in the prefield corresponds to the application of a choice function on the set of possible events delivering a single event from which its existence follows. That corresponds to the judgment in the pertinent context of speech. We analysed assertions as the *proclamation of this judgement*. Only then, in the social setting, do commitment issues arise. The liability for the truth is therefore a pragmatic property related to the speaker by abstract θ-marking. The fronting of finiteness brings the proposition on to the discourse table which we analyse as *pragmatic anchoring*. The concerning proposition is then the focus of discussion for speaker and addressee(s) and therefore *at-issue*.

We proceeded to enunciate how the differences in terms of abstract or literal θ-marking are represented on the discourse table and how the different aspects of assertion are applicaple to embedded V2 under attitude verbs. The semantic part of assertion, namely the anchoring in the context of the speech situation and the choice function are realized in the same way as in root declaratives. It is only the difference in θ-marking which relates the matrix subject to the expressed judgment discharging the speaker from his liability to the truth of the proposition. Embedded V2 offers the speaker the chance to realize the pragmatic part of the assertion, but releases him from the commitment.

After showing the possibilities of anchoring in the discourse with differentiating variables concerning the speech event, we examined cases that lack V-to-C movement and a matrix predicate for θ-marking. Moreover, we ascertained that anchoring in these cases does not happen. The addressee has to accommodate the resulting ambiguity and decide which context is the one to assign the propositional content to.

We conclude with a short summary of our central assumptions:

- The interpretation of the deictic features of finiteness provides the motivation for V2.
- Two differing anchoring principles govern the semantic and pragmatic effects of V2.
- Taking these principles to be correct, several aspects of root clauses as well as clauses under attitude verbs and adverbial clauses together with their semantic interpretation in discourse contexts lead to a consistent theory of verb second in German.

– Without V-to-C movement, explicit binding to the discourse context is not possible. Attribution of values via a complementizer either connects the variables to a matrix context or leads to an accommodation via a binding to the speech situation as long as syntactic integration does not force a matrix related interpretation.

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Svetlana Petrova

Variation and change in the licensing of dependent V2 in German

Abstract: By analysing newly retrieved corpus data, the article seeks to discover classes of predicates that embed asyndetic V2-complements in Old and Middle High German. It shows that regarding V2-embedding, the distinction between modern German and its historical stages is less wide than assumed so far. A subclass of main verbs which does not admit embedded V2 in modern German but apparently does so in Old and Middle High German is the one including verbs involving an inherent negative feature, like non-assertive *doubt* and *deny* or negative implicative *avoid* and *prevent*. Importantly, these verbs select complements that have superficial V2-order only if they are in the scope of negation. In addition, this pattern emerges in late OHG, replacing an originally syndetic structure, after the loss of the respective negative complementizer *ni*. It is concluded that the superficial V2-order in this class of data results from changes in the expression of (expletive) negation, while the typology of V2-embedding predicates remains the same throughout the history of German.

1 Introduction

Modern German gives rise to well-known alternation between canonical verb-final clauses introduced by *dass* 'that' (*that*-Vfinal) and apparently equivalent asyndetic (complementizerless) variants displaying verb-second word order (aV2), see (1) vs. (2):

(1) Ich glaube, [dass er recht *hat*]
I believe that he right has

(2) Ich glaube, [er *hat* recht]
I believe he has right
'I believe that he is right' (Reis 1997: 121)

Svetlana Petrova, University of Wuppertal

https://doi.org/10.1515/9781501508141-008

Work on contemporary German has recognized that this alternation is limited, in that the asyndetic variant is subject to syntactic, semantic and pragmatic constraints (Reis 1997, Auer 1998, Romberg 1999, Meinunger 2004, 2006, 2007, Truckenbrodt 2006, Freywald 2013). Above all, it is assumed that the selection of V2-complements depends on the semantic class of the governing predicate. On the one hand, there are classes of categories – verbs, nouns, adjectival predicates – that allow (and in some registers even prefer) aV2-clauses as arguments (aV2-licensors), e.g. speech-embedding predicates (*say, tell*), doxastic predicates (*think, hope, suppose*), or predicates expressing a preference (*it is better/best*). On the other hand, there are classes of predicates which disallow such complements (aV2-blockers), most of all factive-emotive (*regret, resent*) and inherently negative predicates (*doubt, deny, prevent, ignore*, etc.). Accounting for these distributional facts, Reis (1997) analyses aV2-clauses in terms of mediated (indirect) assertions ('vermittelte Assertionen'), i.e., aV2-clauses convey propositions as attitudes (words, thoughts, beliefs, or preferences) of an epistemic subject, which are considered as valid in some alternative world. At the same time, Reis (1997) remarks that complements selected by aV2-blockers cannot express assertable propositions. E.g., factive verbs like *regret, resent, be sorry* presuppose the truth of the embedded proposition, while negative verbs like *doubt* and *deny* exclude the validity of the embedded proposition in the word of the epistemic subject.[1, 2]

1 Similar effects occur in the complements of implicative and negative implicative verbs, see Kiparsky and Kiparsky (1971). With these verbs, the truth of the embedded proposition depends on the presence of negation in the matrix clause. Implicative verbs like *cause* and *manage* presuppose true complements only if used in affirmative contexts. In contrast, negative implicative verbs like *fail* and *prevent* subcategorize true complements if used under negation. I included these groups as individual classes in the typology of predicates investigated for the study.

2 These two restrictions also hold for clauses subcategorized by well-accepted aV2-licensors. First, negation in the matrix clause renders aV2-clauses inacceptable, as shown in (i) vs. (ii), unless the embedded proposition is interpreted as an indirect assertion, assigned to some epistemic subject accommodated by presupposition in the context, as in (iii), see Ulvestad (1955 and 1956) and Butulussi (1991):

(i) Peter findet (*nicht), Anna *kennt* sich gut mit Wein aus (Freywald 2013, her (27)a)

(ii) Es wäre höflicher/*unhöflicher, du *zahlst* sofort (Freywald 2013, her (27)c)

(iii) Schreibt nicht ... Kardinal Granvella, es *sei* mit dem stolzen Oranien aus? (Ulvestad 1955: 332 f)

Second, the pragmatic status of the dependent proposition also has an impact on the availability of aV2-clauses. Romberg (1999) and later Meinunger (2006, 2007) observe that aV2 is inappropriate if the respective proposition is already settled as true in the common ground of the interlocutors, see (iv):

(iv) A: Bernd ist endlich gekommen!
B: Ja, ich habe schon gehört, dass Bernd endlich gekommen *ist*
B': #Ja, ich habe schon gehört, Bernd *ist* endlich gekommen (Meinunger 2006: 465, his (10)).

Note that these two classes of verbs also reject limited embedded V2 in Germanic (Vikner 1995) and embedded root transformations in general (Hooper and Thompson 1973). This suggests that the relation between V2-embedding and the assertivity of the proposition results from a more basic, universal property.

At the same time, historical German displays evidence that challenges the relatedness between V2-embedding and the assertive potential of the proposition. Data discussed in the diachronic literature and cited in (3) to (5) suggests that in Old High German (OHG, *c.* 750 – 1050), aV2-clauses are possible as arguments of inherently negative verbs like *doubt*, *deny* or *refrain from*, incl. related nouns (see Erdmann 1874, Behaghel 1928, Näf 1979, Auer 1998, Axel-Tober 2012):

(3) Íh ne-zuîelon óuh . [tû ne[3]-*múgîst* iz keléisten]
I Neg-doubt also you Neg-can it fulfil.Inf
'Neither do I believe that you can fulfil it'
(NBoeth IV 186, 8f., cit. in Axel-Tober 2012: 158)

(4) Tés nemág áber nehéin lóugen uuésen . [íz ne-*sî*] .
this.Gen Neg-can but no denial be.Inf it Neg-is.3SgSubjPres
unde [íz ne-*sî* úrspríng álles kûotes]
and it Neg-is.3SgSubjPres source all.GenSg good.GenSg
'It cannot be denied that it exists and it is the source of all good'
(NBoeth III 152, 9 ff, cit. in Axel-Tober 2012: 156)

(5) Tára nâh ne-uerlîez óuh ambrosius nîeht .
there after Neg-refrain also Ambrosius neg
[ér ne-*scrîbe* de officiis]
he Neg-write.3SgSubjPret de officiis
'After that, Ambrosius did not refrain from writing *De Officiis*'
(NBoeth II 88, 18 f; cit. in Näf 1979: 275)

Similar data is presented by Paul (1968 [1920]: 171 ff) who shows that in Middle High German (MHG, *c.* 1050 – 1350), asyndetic clauses with verb medial order

3 The status of the element OHG *ni/ne* and its MHG successor *ne* will be subject of special discussion in section 3.3.3. Standardly taken, this is the original preverbal sentential negator, the equivalent of Lat. *non*, which is replaced by adverbial negation in later German. Basically, with the notable exception of cases in which *ni* is in the C-domain (see section 3.3.2 below), *ne/ni* is always preverbal. According to Jäger (2008), *ni/ne* is a clitic originated in Neg° above VP, which attracts the finite verb as a phonological host to attach to it. In root clauses, the clitic complex consisting of *ni/ne* and the finite verb moves together to C°.

frequently occur as subjects or objects of verbs with a negative meaning, such as *forget*, *absent from* or *prevent*.[4] To account for this data, the literature has assumed that the distribution of aV2 is broader in historical German, and that the restrictions present in modern German result from changes in the typology of the predicates selecting embedded V2 over time (see Behaghel 1928, Auer 1998).[5] This is rejected by Axel-Tober (2012), who claims that the examples cited from OHG and MHG are no formal equivalents of the modern German type of V2-embedding but rather representatives of a structurally and semantically different complementation pattern. According to the first hypothesis, the relatedness between aV2 and assertivity in modern German is an epiphenomenon of a diachronic process leading to restrictions in the inventory of V2-embedding verbs over time. In Axel-Tober's (2012) view, in contrast, OHG and MHG does not display

4 In addition, both in OHG and MHG display aV2-clauses as complements of directive verbs, as in (i) (see also Paul [25]2007 and Axel-Tober 2012 for more examples from MHG). These verbs allow aV2 in modern German only if the inflected verb is the embedded clause is a modal, but not if it is a main verb (see Helbig and Kempter 1974, Truckenbrodt 2006). This additional condition must have emerged after the MHG period:

(i) bat [man *gâbi* imo then mán]
asked Indef gave.3SgSubjPret him the.Acc man
'[he] asked them to give him the [dead body of the] man'
(O IV 35, 6, cit. in Petrova, forthcoming).

5 Paul (1968 [1920]: 170 ff) suggests that remnants of this originally broader distribution of aV2-clauses still survive until early Modern German. He provides examples from literary writings of the 18th, 19th and early 20th century in which aV2-clauses are subcategorized by modern German aV2-blockers, such as the semi-factive verb *beweisen* 'prove' or inherently negative predicates like *vergessen* 'forget' and *zweifeln* 'doubt':

(i) sie wird dir beweisen, [du *lebest* auch in heißer Zeit]
she will you prove you live-2SgSubjPres also in hot time
'she will prove to you that you also live in an exciting age'
(Goe., Br., 16,19,14, Paul 1968 [1920]: 176)

(ii) daß er ... vergaß, [er *sei* allein]
that he [...] forgot he is-3SgSubjPres alone
'that he [...] forgot that he was alone' (J. Paul, Siebenkäs 466; Paul 1968 [1920]: 176)

(iii) da er nicht zweifelte, [sein Sohn *werde* sie doppelt tief ins
because he not doubted his son Aux-3SgSubjPres them twice deep in-Det
Wasser führen]
water guide
'because he did not doubt that his son would guide them into twice as deep water'
(G. Keller 6, 326; Paul 1968 [1920]: 179).

aV2-complementation at all[6] and consequently, there is no diachronic challenge to the assertivity hypothesis put forward in Reis (1997).

To complete this picture, the present investigation seeks to determine the distribution of aV2-clauses in corpora of the historical stages of German, and to elaborate on changes that took place over time. The outcome of the analysis will be as follows. First, there is no evidence for aV2 in complements of factive emotive, semi-factive and implicative predicates, in the historical corpus. Second, there is evidence for superficial V2 order in the complements of verbs involving an inherent negative feature, but this order is attested only if the matrix clause is negated, and it emerges towards the end of the OHG period, after the loss of the complementizer that was originally used to introduce such clauses. In view of these observations, it will be concluded that no change regarding the typology of categories selecting aV2-clauses in the history of German must be assumed.

2 Method and data

Summarizing observations of the previous literature, a classification of aV2-licensors versus aV2-blockers in modern German can be established in the way given in (6) and (7) (see Reis 1997, Romberg 1999, Meinunger 2004, 2006, Freywald 2013):

(6) a. verbs of saying and derived nouns: *sagen* 'say', *behaupten* 'claim', *erzählen* 'tell', *die Erzählung* 'the story', etc.
b. doxastic predicates and derived nouns: *glauben* 'believe', *meinen* 'mean', *finden* 'think, believe', *der Glaube* 'the belief'
c. evidential verbs and derived nouns: *merken* 'realize', *spüren* 'feel', *sehen* 'see', *hören* 'hear', *das Gefühl* 'the feeling'
d. predicates of preference: *es ist besser/das beste* 'it is better/the best
e. predicates of certainty: *klar ist* 'it is clear', *es steht fest* 'it is a fact', *das Ding ist* 'the

(7) a. factive emotive predicates: *bedauern* 'regret', *bereuen* 'resent, be sorry'
b. semi-factive verbs: *herausfinden* 'find out', *entdecken* 'discover', *beweisen* 'prove', 'the thing is'
c. non-assertive predicates: *bezweifeln* 'doubt' and *leugnen/bestreiten* 'deny'

6 Basically, Axel-Tober's (2012) conclusion rests on the observation that there is no safe evidence for verb movement to C in asyndetic argument clauses attested from OHG. But see Petrova, forthcoming on some novel data obtained by way of more extended corpus search.

d. (negative) implicative verbs: *verursachen* 'cause', *bewerkstelligen* 'get something done', *bewirken* 'give rise to', *vermeiden* 'prevent', *unterlassen* 'abstain from', *verhindern* 'prevent' *vergessen* 'forget', *verdrängen* 'suppress', *ignorieren* 'ignore'

The aim of this study is to test the selectional properties of the lexical equivalents of these predicates in OHG and MHG. I use the recently launched electronic corpora of OHG and MHG, *Referenzkorpus Altdeutsch* (ReA) and *Referenzkorpus Mittelhochdeutsch* (ReM), to find the relevant predicates by way of lemma search.[7] For the aims of this study, I restricted the search to verbs only, and left nominal predicates aside for future research. The various classes of verbs and the individual lexemes that were considered for the study are given in (8)a-g:

(8) a. verbs of saying: OHG *quedan*, *sagen* 'say', *sprehhan* 'speak', *zellen* 'tell'; MHG *sagen*, *quëden* 'say', *zèl(e)n* 'tell', *jëhen* 'claim, confess'
b. doxastic predicates: OHG *wanen*, *meinen* 'think', *dunken* 'it seems'; MHG *dènken*, *mèinen*, *(ge)trûwen* 'think, suggest', *gelouben* 'believe'
c. factive emotive verbs: *anton*, *irruofen*, *karon*, *klagon*, *kumen*, *riuwon*, *riozan* 'regret', *buozen* 'repent', *truoben*, *mornen*, *mornenti wesan* 'be sad'; MHG *(be)riuwen*, *klagen*, *riuwesen*, 'regret, repent', *lèid sîn* 'be sorry'
d. semi-factive verbs: OHG *biwaren* 'prove'; MHG *beziugen* 'prove'
e. non-assertive verbs: OHG *abohon*, *firsagen*, *firsahhan*, *(fir)louganen* 'deny', *blugison*, *zwifalon* 'doubt'; MHG *loug(en)en* 'deny', *zwîvel(e)n* 'doubt'
f. implicative verbs: OHG *(gi)recken, (gi)werkon, wurken, gimahhon*, *geschaffen* 'cause'; MHG *geschaffen*, *wirken*, *würken*, *vrümen* 'cause'
g. negative implicative verbs: OHG *giborgen* 'beware', *inthaben* 'abstain from', *biwenken, (bi)midan* 'prevent', *biwankon, elten, firberan* 'refrain from'; MHG *(ver)mîden*, *bewarn, sparn* 'prevent'

As these verbs select both sentential and non-sentential arguments, I determined the type of argument for each individual occurrence of the respective lemma and created a database containing only those instances in which sentential complementation is involved. Table 1 provides the total number of occurrences of the

7 The queries in ReA were specified for language as in (i) in order to restrict the search to the High German records and to exclude Low German and Latin texts which are also part of the corpus. For MHG, the corpus search in ReM was restricted to prose texts only in the way illustrated in (ii), to avoid patterns resulting from rhyme and metrical considerations:
(i) lemma="quedan" & meta::language="ahd."
(ii) lemma="sagen" & meta::genre="P"

individual lexemes, according to the classification to verb groups given in (8)a-g, as well as the absolute number and ratio of sentential complements selected for further analysis.

Table 1: Total of occurrence of lexemes of clause-embedding predicates in ReA and ReM and ratio of finite sentential arguments of any type included in the database.

	OHG		MHG	
	total of lemma	**number and ratio of CP_compl**	**total of lemma**	**number and ratio of CP_compl**
verbs of saying	4.170	228 (5.5%)	1.692	211 (12.5%)
doxastic predicates	478	67 (14%)	947	188 (19.9%)
factive emotive verbs	84	5 (6%)	223	12 (5.4%)
semi-factive verbs	1	–	43	14 (32.6%)
non-assertive predicates	120	10 (8.3%)	110	21 (19.1%)
implicative verbs	278	5 (1.7%)	48	2 (4.2%)
negative implicative verbs	41	18 (43.9%)	204	27 (13.2%)
total	**5.172**	**333 (6.4%)**	**3.267**	**475 (14.5%)**

I studied the type and the distributional properties of the clausal arguments found in the database. The analysis showed that the classes of predicates distinguished in (8)a-g can be grouped together to build a novel, threefold classification, which is based on the uniform behaviour of the verbs in terms of sentential complementation. First, verbs of saying and doxastic predicates[8] display the same properties in that they allow for alternation between canonical *that*-Vfinal and aV2-order in their complements, in the same way they also do in modern German. Second, it turned out that factive emotive, semi-factive and implicative verbs behave identically, in that they do not allow such alternation but strictly select *that*-Vfinal complements, with the exception of some individual lexemes which are ambiguous between a factive emotive reading and a verb of saying. Finally, verbs with a complex, inherently negative meaning, i.e. non-assertive verbs like *doubt* and *deny*, and negative implicative verbs like *fail* and *avoid* pattern together in that the presence of superficial V2-order in the complements of these verbs

8 Note that I excluded cases in which verbs of saying, such as *quedan* and *sagen*, subcategorize embedded commands, as well as *denken* in its meaning 'to intend, to consider'. Both is illustrated in (i):

(i) Ér quad, thes ni *tháhti*, ni ér sih iru náhti
he said this.Gen Neg think-3SgSubjPret Neg he Refl her.Dat approach-3SgSubjPret
'he[=the angel] said that he[=Joseph] should not consider approaching her'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.1.8)

depends on the presence of overt negation in the matrix clause, which triggers expletive negation in the dependent clause.

In the following subsections, I will discuss the complementational behaviour of these three groups of predicates found in the database.

3 Results

3.1 Verbs of saying and doxastic predicates

These two classes of verbs are among the canonical aV2-licensors in modern German. They also support limited embedded V2 in Germanic *that*-clauses, both synchronically (Vikner 1995) and diachronically (Salvesen and Walkden 2017). In addition, they correspond to predicate classes A and B in Hooper and Thompson's (1973) typology of sentence embedding predicates, which allow embedded root transformations in general.

In OHG, these predicates canonically select *that*-Vfinal[9] complements, as shown in (9) and (10). But in addition, asyndetic sentential arguments of these verbs are also attested in the data. On the one hand, there are asyndetic verb-final variants as in (11), i.e., the complementizer is missing but the finite verb remains in its original clause-final position. On the other hand, there are asyndetic complements with clause-medial verb order, as in (12):

(9) Oh sie dhanne zellando quhedant [dhazs noh christ ni
also they then claiming say that yet Christ Neg
quhami]
came-3SgSubjPret
'They also say by claiming that Christ had not come yet'
Lat.: argumentantur dicentes necdum uenisse christum
(DDD-AD-Isidor_1.0 > I_DeFide_5)

9 The category '*that*-Vfinal' also applies to clauses in which the finite verb is followed by some constituent, as in (17), (21)a-b and (26), among others. In these cases, the verb is still underlyingly final but some constituent that is originated in the VP is extraposed to the right (see also Axel 2007: section 2.6). In (19)a, the post-final constituent is a pronoun, a category excluded from extraposition. Note, however, that this example is from Otfrid's *Gospel Book*, which is end-rhyming poetry. Therefore, the reason for the post-verbal placement of the pronoun *sin* is that it is in rhyme with *mín*. An alternative interpretation, namely that the verb is clause-medial because it moves to the left in *thaz*-clauses itself, is less probable because this type of movement is not safely attested in OHG (see Petrova and Weiß 2018 for discussions and references).

(10) sie uuantun [thaz er fon resti slafes
they thought that he about tranquillity sleep-GenSg
quadi]
spoke-3SgSubjPret
'They thought that he had referred to the tranquility of sleeping'
(DDD-AD-Tatian_1.0 > T_Tat135)

(11) Quád, [ø sie thaz ni *wóltin*]
said ø they this Neg wanted.3PlSubjPret
'[he] said that they did not want this'
(O I 20, 29; cit. in Petrova, forthcoming)

(12) Sum quad [er *dáti* widar gót]
someone said he acted-3SgSubjPret against God
'Someone said that he had acted against God'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.3.20)

Axel-Tober (2012) discusses the asyndetic patterns in (12), suggesting that they can be also derived from the asyndetic Vfinal pattern in (11), by assuming regular extraposition of PPs and DPs. But she also identifies cases in which there is evidence for the leftward movement of the verb in the dependent clause, as in (13). As the VP-internal adverb *rèhto* 'truly' is excluded from extraposition to the right itself, the resulting order must be attributed to verb movement to the left periphery of the clause. Searching the OHG attestation in ReA, Petrova, forthcoming identifies additional examples in which there is diagnostic evidence for verb fronting in the asyndetic clause. These clauses, as in (14), provide additional evidence for aV2 in OHG.

(13) Ih uuánu [thu *sis* réhto thésses mannes
I think you are.2PlSubjPres truly this.GenSg man.GenSg
knéhto]
disciples.GenPl
'I think that you are truly one of the disciples of this man'
(O IV 18, 8, Axel-Tober 2012: 162)

(14) Joh spréchent hiar in ríche \ thie liuti ouh súmiliche
and speak here in empire the people also certain
[thu *sís* giwisso héiler \ thero fórasagono éiner]
you are.2SgSubjPres certainly holy the.GenPl prophets.GenPl one
'Some people here in the empire say that you are holy, one of the prophets'
(O III 12, 17f., cit. in Petrova, forthcoming)

In the prose texts from MHG that I considered for the analysis, I found no asyndetic Vfinal-clauses any longer. But I found evidence for *that*-Vfinal and aV2-orders in the complements of verbs of these classes. Some examples are given for illustration in (15) to (18):

(15) vñ fageten deme kůníge [daz iz ein heilic
and said the.DatSg king.DatSg that it a holy
biſchof *were*]
bishop was.3SgSubjPret
'and told to the king that it was a holy bishop' (13_1-thurhess-PV-G > M330-G1)

(16) ſo ſageten aber andere [er *were* iheremias]
so said but others he was.3SgSubjPret Jeremiah
'but the others said that he was Jeremiah' (12_2-thurhess-PV-G > M177-G1)

(17) ſi kiloupta [daz er ſi heilen *mahte* mit ſinen uuorten]
she believed that he her heal could with his.DatPl words.DatPl
'she believed that he could heal her with his words'
(11-12_1-obd-PV-X > M182C-N1)

(18) Si meint [dů̇ gotheit *ſi* die rehte hand]
she thinks the divinity is.3SgSubjPres the right hand
'she thinks that the divinity is the right hand' (14_1-alem-PU-G > M322-G1)

The quantitative distribution of the various patterns in the complements of verbs of saying and doxastic predicates in OHG and MHG is given in Table 2:

Table 2: Quantitative distribution of clausal complements of verbs of saying and thinking in ReA and ReM.

	OHG				MHG		
	total	***thaz*-Vfinal**	**aVfinal**	**aV2**	**total**	***that*-Vfinal**	**aV2**
verbs of saying	228	123	69	36 (15.8%)	211	162	49 (23.2%)
doxastic predicates	67	44	14	9 (13.4%)	188	180	8 (4.3%)
total	**295**	**167**	**83**	**45 (15.3%)**	**399**	**342**	**57 (14.3%)**

As the figures in Table 2 suggest, *that*-Vfinal patterns exceed by far in both language periods. The low percentage of aV2-clauses as arguments of doxastic predicates in MHG, compared to OHG, might be attributed to the fact that I excluded

the verb *wænen* 'suggest', which yields a high number of additional aV2-clauses but which is also very frequent in a parenthetic use, which is often indistinguishable from a aV2-pattern. All in all, we do not discover a difference in the complementational behaviour of these verbs regarding V2 embedding.

3.2 Factive emotive, semi-factive and implicative predicates

These three classes of verbs do not support aV2 in modern German. In addition, factive emotives like *regret* are among the most prominent blockers of limited embedded V2 in Germanic (Vikner 1995) and of embedded root transformations (see Hooper and Thompson 1973, their class D predicates).

In the database, these classes of verbs only select canonical *that*-Vfinal complements. For illustration, I provide some data for the three classes of verbs in OHG and MHG in (19)a-b to (21)a-b below. For OHG, I found no data for clause-embedding arguments of equivalents of the semi-factive verb *prove*:

(19) a. want er in ímo buazta [thaz er ér ju in war mín
because he in himself repented that he earlier already indeed
so thiko *lóugnita* sin]
so often denied him.Gen
'because he repented in himself that he indeed had denied him so often previously' (O_Otfr.Ev.5.15)

b. lat iv leit ſin [daz ir îe wider ſinen huldin *getâtit*]
let you sorry be that you ever agains his mercy.DatPl did-2Pl
'Be sorry that you ever acted against his mercy'
(12_2-bairalem-PV-X > M214y-N1)

(20) der daz bezíugen mac [...] / . [daz ez d^{s} ſelpwaibel
who.Rel this prove can that it the messenger.of.the.court
níht getan *hat*]
not done has
'who can prove that the messenger of the court has not done this
(13_2-bairalem-PV-G > M411-G1)

(21) a. joh mit thíu giwerkon [thaz thu úns es *muazis* thánkon]
and thereby make that you us it may.2SgSubjPres thank.Inf
'and thereby make that you may thank us'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.2.24)

b. Ích geſcáffo. [daz dîe kêiſere. unte dîe. cúninga [...]
I make that the emperors and the kings
daz ſîe *adora*(*bunt*) ueſtigia pedu(m) tuoru(m)
that they adore steps feet.GenPl your.GenPl
'I cause that the emperors and the kings adore the steps of your feet'
(11_2-12_1-obd-PV-G > M244-G1)

Three instances of *klagen* found in ReM and cited in (22)a-c deserve special attention, as they come with aV2-complements:

(22) a. vñ kleíte [ſíne *mohte* den tôt ír ſchêffêrs
and complained she-Neg could the-Acc death her creator.Gen
deheíne wîs âne geſêhen]
no way at look.Inf
'and she complained that she was in no way able to see the death of her creator' (13_1-bair-PV-G > M329-G1)

b. ſi klagt ovch [ſí *waz* eín ſelíc wip vnd
she lamented also she was a blessed woman and
behielt gotes gebot]
obeyed God.Gen law
'she also lamented that she used to be a blessed woman who obeyed God's law' (13_2-bair-P-X > M403y-N0)

c. vñ ſi klagt im [Ioſeph *wold* bi ir
and she complained him.Dat Joseph wanted at her
gelegen ſin]
lie.PastPart be.Inf
'and she complained to him that Joseph wanted to lie by her side'
(13_2-bair-PV-G > M403-G1)

Note, however, that similarly to its modern German equivalent *bedauern* 'regret' (Wichter 1978, Lohnstein 2000), MHG *klagen* is ambiguous between a factive emotive interpretation, meaning 'to regret', and an interpretation as a verb of saying meaning 'to lament, to utter a complaint'. In the examples at issue, the interpretation of *klagen* as a factive emotive verb leads to unnatural interpretations of the dependent proposition. E.g., in (22)a, being unable to stand the tragic sight of the Creator's death can hardly be perceived of as being the subject of regret, but is absolutely natural as conveying an uttered lament. Similarly, in (22) b, being a blessed woman who obeys God's rules cannot be naturally interpreted as the reason for repentance, while it is completely appropriate as the contents of

verbal utterance expressed in grief. Finally, in (22)c, the meaning of *klagen* as a verb of saying is supported by the dative pronoun *him* referring to the addressee of the utterance. In sum, MHG *klagen* cannot be regarded a factive emotive verb in these cases. For these reasons, the three cases in (22)a-c were excluded.

The frequency of the patterns of found in complements of the respective verbs is given in Table 3:

Table 3: Quantitative distribution of clausal complements of factive emotive, semi-factive and implicative verbs of in ReA and ReM.

	OHG		MHG	
	total	***thaz*-Vfinal**	**total**	***thaz*-Vfinal**
factive emotive verbs	5	5 (100%)	12	12 (100%)
semi-factive verbs	–	–	14	14 (100%)
implicative verbs	5	5 (100%)	2	2 (100%)
Total	**10**	**10 (100%)**	**28**	**28 (100%)**

3.3 Inherently negative predicates

This group unifies clause embedding predicates with an inherently negative feature, such as non-assertives like *doubt* and *deny*, and negative implicative verbs like *avoid* and *prevent*. In modern German, these verbs are considered strict aV2-blockers. In Hooper and Thompson's (1973) classification, non-assertives are listed as a class of predicates which rejects embedded root phenomena (class C therein), while negative implicative verbs selecting non-finite clauses in modern English remain outside their classification.

In OHG and MHG, there is considerable variation regarding the formal properties of the embedded clauses selected by these verbs. A crucial factor ruling this variation appears to be the polarity of the matrix clause. For this reason, the types of complements licensed by negative verbs will be discussed separately, depending on the question if the matrix clauses that contains it is affirmative or overtly negative. An overview of the numbers of examples contained in each group is given in Table 4.

3.3.1 Complements of negative verbs in affirmative matrix clauses

Complements of negative verbs in affirmative matrix clauses systematically display the canonical *that*-Vfinal-pattern demonstrated in (23)a-b for OHG and

Table 4: Complements of non-assertive and negative implicative verbs in affirmative and negative matrix clauses in ReA and ReM.

	OHG			MHG		
	total	**affirm**	**neg**	**total**	**affirm**	**neg**
non-assertive	**10**	6	4	21	13	8
negative implicative	**18**	7	11	27	26	1
total	**28**	**13**	**15**	**48**	**39**	**9**

in (24)a-c for MHG. In addition, there are clauses in which the complementizer is dropped but the verb is still in final position (aVfinal-clauses), as shown in (25):

(23) a. aer auuar laucnita mit eidu [daz ær den man ni
her again denied on oath that he the man.Acc Neg
uuisti]
knew.3SgSubjPret
'again, he denied on oath that he knew this man' (MF_1_M.XXIII)

b. joh íagilih biwénke, [thaz ér nan ni
and everyone avoid.3SgSubjPres that he him.Acc Neg
fírsénke]
destoy-3SgSubjPres
'and everyone should avoid being destroyed by him'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.2.3)

(24) a. vnd er lavgent aber mít aiden [daz er ín iht *erchant*]
and he denied again on oath that he him.Acc not knew
'and again, he denied on oath that he knew this man' (14_1-bair-PUV-G > M323-G1)

b. Er zwiflete o̊ch [daz v̇nſer hs̊re (Jesus) (Christus) nít
he doubted also that our lord Jesus Christ not
geborn *ws̊e*]
born was
'He also doubted that our Lord Jesus Christ was not born'
(14_1-alem-PU-G > M322-G1)

c. do ſatztin ſi ir hůtâre . die daz be=warn ſoltin.
then posted they their guards who that prevent.Inf should

[daz er iht erſten *mahti*]
that he not arise.Inf could
'then, they posted guards who should prevent him from arising'
(12_2-bairalem-PV-X > M214y-N1)

(25) thaz íagilih bimíde, [inan thíu ákus ni *snide*]
that everyone avoid.3SgSubjPres him.Acc this ax Neg cut.3SgSubjPres
'that everyone should avoid being hit by this axe'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.1.23)

The frequency of these individual patterns is summarized in Table 5:

Table 5: Quantitative distribution of clausal complements of inherently negative verbs in affirmative matrix clauses in ReA and ReM.

	OHG			MHG	
	total	**that-Vfinal**	**aVfinal**	**total**	**that-Vfinal**
non-assertive	6	6	–	13	13
negative implicative	7	2	5	26	26
total	**13**	**8**	**5**	**39**	**39**

What is special with the complements of this group of verbs is the fact that the embedded clauses contain a negative element, such as OHG *ni*, or MHG *iht*[10] and *nit*. These elements normally act as sentential negators in the respective periods, but crucially, in the examples at issue, the embedded proposition is inherently affirmative. E.g., what Peter denies in (23)a and (24)a is that he knows Jesus, and what should be prevented in (23)b and (24)c is being destroyed or allowing the captive to arise. Finally, the object of doubt in (24)b is the fleshly birth of Jesus. In other words, the negative elements contained in the respective complement clauses do not affect the polarity of the embedded proposition, which is always affirmative. I therefore assume that the negative elements contained in the respective clauses is the exponent of paratactic (pleonastic) negation (Jespersen 1917), which is licensed by the negative feature in the lexical meaning of the governing predicate. Note also that in none of the cases, V2-order is found.

10 This is actually a non-negative indefinite that is considered an NPI occurring in double negation in MHG, see Jäger (2008).

3.3.2 Complements of negative verbs under matrix negation

Let us turn to those cases in which the matrix clause containing a non-assertive or negative implicative verb is negated itself.

Here, we discover a crucial difference in the form of the respective complement clauses that divides classical OHG from late OHG and MHG. Consider a representative example from the classical OHG period given in (26) first:

(26) ni móht ih mih inthában sar, [nih hera
Neg could I Refl abstain.from just Neg-I here
gīlti zi thír]
hurried.1SgSubjPret to you.Dat
'Just, I could not abstain from hurrying to you now'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.2.7)

Note that as shown in (26), this class of complements also involves a negative element, the element *ni* in the beginning of the clause. Again, it must be assumed that this element is the exponent of expletive (pleonastic) negation because the embedded proposition is affirmative itself: what the speaker did not abstain from was going to Jesus, not the opposite. But in striking difference to the dataset in the previous subsection, the exponent of expletive negation is not in clause-internal but rather in clause-initial position. In particular, it can be seen from the example in (26) that *ni* precedes a typical Wackernagel element, namely the subject pronoun *ih* 'I', which is encliticized to *ni*. As we know that Wackernagel elements attach to C, it must be suggested that *ni* itself occupies a position in the C-domain of the clauses.

Note that the diachronic literature, e.g. Schrodt (2004: 181 f) and Jäger (2008: 76 f), discusses similar instances of clause-initial *ni* in relative and adverbial clauses, illustrated in (27) and (28)[11]:

(27) Nist gúates wiht in wórolti [ni er
Neg-is good-GenSg thing in world.DatSg NI er
untar úns hiar *wórahti*]
unter uns hier made.KonjPrät
'There is nothing good in the world which has not be created by him'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.4.26)

11 In addition, there are rhetorical questions in which *ni* is part of the complex left periphery, see Axel (2007: section 2.4.1.1).

(28) ni si mán nihein so véigi, [ni sinan zíns
Neg is-SubjPres man no as insignificant NI his tax
eigi \ Héime]
has.SubjPres at.home
'No man should be considered as insignificant such that he should not pay his taxes in his home town'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.1.11)

It is common opinion that *ni* is a C-element in these clauses. This is corroborated by instances in which *ni* is part of a complex complementizer of the type *nibu/noba/nub* 'unless', in which *ni* precedes the conditional subordinator *ibu* 'if'.

Scanning the data discussed in the literature, one notices that clause-initial *ni* in relative and adverbial clauses always appears in the presence of a negative element in the matrix clause, as can be also observed form the examples in (27) and (28). I searched all occurrences on clause-initial *ni* in ReA to check this relation. I found that in all cases in which *ni* is annotated as a conjunction (in contrast to the pre-verbal negative particle *ni*), there is overt negation in the matrix clause as well. The complements of negative verbs under negation just fit into this picture. I therefore assume that clause-initial *ni* in the complements of negative verbs under negation is a complementizer, and that *ni*-Vfinal is the equivalent of the syndetic *that*-Vfinal-pattern found in the complements of the corresponding affirmative matric predicates, with *thaz* and *ni* being in complementary distribution, depending on the polarity of the matrix clause.

Also in parallel to *thaz*, the complementizer *ni* can be dropped, leading to aVfinal-patterns in the respective complement clauses, see (29). Here, I assume that the missing complementizer is *ni* because the matrix clause is negated. The verb, however, is not moved to the left in the absence of a complementizer but remains in clause-final position:

(29) Nu sie tház ni mident, [so hohan gómon *rinent*]
now they this Neg avoid such dignified.Acc man.Acc attack
'now, they do not avoid to attack such a dignified man'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.5.25)

Finally, one pattern deserves special attention. Consider the sentence in (30). Note that here, the complementizer *ni* is still present in the clause but the finite verb *sii* is evidently moved to the left, as it occupies a position above the VP-internal epistemic adverb *giwisso* 'truly'. I will call this pattern *ni*-V2:

(30) In dhesemu quhide ni bluchisoe eoman,
in this.DatSg sentence.DatSg Neg doubt.3SgSubjPres anyone
[ni dhiz *sii* chiuuisso dher ander heit godes]
Neg this is-3SgSubjPres truly the other shape God-Gen
'Nobody should doubt that this sentence demonstrates the other shape of God' (Isidor_1.0 > I_DeFide_3)

From late-OHG onwards, the situation is different. Already in the texts composed by the late-OHG writer Notker, we do not find clause-initial *ni* any longer. Instead, we find the pattern attested in (31), in which *ne<ni* forms a clitic complex with the finite verb and is situated in clause-medial position, preceded by a another XP. This pattern continues to exist during the MHG period, as shown in (32), but is missing in later stages of German:

(31) Íh neuerságo nîeht . [éin substantia nesî hártôr
I Neg-deny NEG one substance Neg-is.3SgSubjPres harder
substantia dánne ánderiu]
substance than other
'I do not deny that one substance is harder than the other one'
(N_Cat_notkbcat-Boeth.Cat.Boeth.Cat.33)

(32) ih neloukene deſ niet [iz ne *ſi* min wille]
I Neg-deny this.Gen not it ni is-3SgSubjPres my will
'I do not deny that it is my will' (M213-N1)

Note that this is exactly the pattern discussed as a potential instance of aV2 in the previous literature and exemplified in (3) to (5) above. I will argue that this pattern is only apparently asyndetic, because it originates from a structure with an overt complemenizer. I will use the label 'a'V2 to refer to it.

The quantitative distribution of the various patterns found in complements of inherently negative verbs under negation is summarized in Table 6:

Table 6: Quantitative distribution of clausal complements of inherently negative verbs in negative matrix clauses in ReA and ReM.

	OHG					MHG	
	total	***ni*-Vfinal**	**aVfinal**	***ni*-V2**	**'a'V2**	**total**	**'a'V2**
non-assertive	4	–	–	2	2	8	8
negative implicative	11	7	2	1	1	1	1
total	**15**	**7**	**2**	**3**	**3**	**9**	**9**

In the following subsection, I will propose a structural analysis of the 'a'V2-pattern as a successor of the structure involving the negative complementizer *ni* in OHG.

3.3.3 Deriving 'a'V2

A basic property of the complement clauses discussed in 3.3.1 and 3.3.2 is that they involve expletive negation (Jespersen 1917, Krifka 2010), i.e. they contain a negative element which does not affect the polarity of the embedded proposition. We also observe that there are two distinct semantic features triggering this kind of negation, and that the expletive negators selected by these two triggers occupy different structural positions in the clause. In complements of negative verbs in affirmative matrix clauses, the expletive negator is in clause-internal position, and it is licensed by the negative feature that is part of the lexical semantics of the respective matrix verb, see (33)a. In contrast, in the complements of overtly negated matrix predicates, the exponent of the expletive negation is the complementizer *ni*, selected by the matrix negation itself, see (33)b. However, already during the OHG period, the negative complementizer *ni* is lost and the respective complementation pattern is replaced by the one in (34):

(33) a. {*doubt, deny, prevent,* etc. } → [$_{CP}$ *daz* … NEG$_{expl}$-*Vfin*]
b. ¬{*doubt, deny, prevent,* etc. } → [$_{CP}$ *ni*$_{expl}$ … *Vfin*]

(34) [$_{CP}$ *XP* – *ne/en*$_{expl}$-*Vfin*]

In the remaining part of this section, the emergence and the structural representation of the pattern in (34) will be discussed.

Note, first, that overt negation in the matrix clause does not license expletive negation in the dependent clause across the board in OHG. As can be seen from the data in (35)a-b, complements of other verbs in OHG display the canonical complementizer *that* even if the governing predicate is negated, and in MHG, the pattern (34) does not show up if the matrix clause contains negation, see (36)a-d:

(35) a. ni wáne [theih thir *gélbo*]
Neg think.Imp that-I you.DatSg deceive.1SgSubjPres
'Do not think that I am deceiving you'
(DDD-AD-Otfrid_1.0 > O_Otfr.Ev.1.23)

b. uuande si nieth niwurchent [daz si *kiloubent*]
because they not Neg-made that they believe
'because they did not succeed in letting them believe' (DDD-AD-Kleinere_Althochdeutsche_Denkmäler_1.0 > APB_PredigtsammlungB)

(36) a. ob ich ev niht geſaget het .
if I you.DatPl not said had.1PlSubjPret
[daz ich gen ev *beraîttet* dív ſtat]
that I against you.DatPl prepare-1SgIndPret the city
'If I had not told you that I prepare the city [for defence] against you'
(14_1-bair-PUV-G > M323-G1)

b. vñ nieman getruwete [daz er *geneſe*]
and no one believed that he recovere.3SgSubjPres
'and no one believed that he would recover'
(13_1-thurhess-PV-G > M330-G1)

c. ich engloube nít [daz xꝑc erſtanden *fi*]
I Neg-believe not that Chirst resurrected is.3SgSubjPres
'I did not believe that Christ has resurrected'
(14_1-rhfrhess-PV-X > M407y-N0)

d. mag er danne niht bezíugen [daz ím íener
can he then not prove that him.Dat the other one
friſt gæben *habe*]
deadline given has.3SgSubjPres
'If he cannot prove that the other one has set a deadline'
(13_2-bairalem-PV-G > M411-G1)

This suggests that the change from (33)b to (34) is a consequence of the loss of the negative complementizer *ni* as exponent of expletive negation only in the complements of a special class of verbs during the OHG period.

Second, recall that the expletive negator *ni* in OHG allows for verb movement in the complement clause that it introduces, as demonstrated in (30) above and repeated in (37) for convenience:

(37) In dhesemu quhide ni bluchisoe eoman,
in this.DatSg sentence.DatSg Neg doubt.3SgSubjPres anyone
[ni dhiz *sii* chiuuisso dher ander heit godes]
Neg this is-3SgSubjPres truly the other shape God-Gen
'Nobody should doubt that this sentence demonstrates the other shape of God' (Isidor_1.0 > I_DeFide_3)

The word order in (37) can be accounted for if we assume multiple complementizers in the left periphery of the clause, also called complementizer doubling (Poletto 2000, Ledgeway 2005), with expletive *ni* being situated in the head of the higher complementizer, in Force°, and the finite verb *sii* moving to the missing lower complementizer, Fin°, see (38)[12]:

(38) [$_{\text{Force°}}$ ni … [$_{\text{SpecFinP}}$ dhiz$_j$ … [$_{\text{Fin°}}$ sii$_i$ [$_{\text{IP/VP}}$ chiuuisso t$_j$ dher ander heit godes t$_i$]]]]

Note that there is safe evidence suggesting that historical German has complementizer doubling, and that verb movement to the position of the lower complementizer takes place. In (39)a-b, I provide examples in which both the higher and the lower complementizers are present; either there is an adverbial subordinator in Force° and an additional complementizer *that* in Fin°, see (39)a, or both positions are occupied by the complementizer *that*, see (39)b:

(39) a. in duom quam ih in thesa uueralt,
in judgement came I in this world
thaz thie dar ni gisehent gisehen,
in.order.that those Part Neg see.3PlIndPres see.3PlSubjPres
in thie dar gisehent *daz* sie sin blinte
and those Part see.3SgIndPres that they are-3PlSubjPres blind-Pl
'I came to judge, in order that those who do not see become seeing and those who see become blind' (DDD-AD-Tatian_1.0 > T_Tat133)

b. Unſ ſaget ǒch div heilige ſchrift.
us.Dat tells also the holy scripture
daz zeder wile do adam daz uerboten
that at.the time when Adam the forbidden
obiz eze.
fruit e eat.3SgSubjPret
daz zů der ſelben wile der heilige kriſt.
that at the.Dat same time the holy Christ
an dem heiligen krivce mit gallin unt mit ezziche
at the.Dat holy cross with gall.Dat and with vinegar

12 Alternatively, it can be argued that the XP *thiz* is topicalized to SpecTopP, as it refers to the aboutness topic 'this sentence', dealt with in the preceding discourse.

gitrenkit wůrde.
drunk was
'The Holy Scripture also tells us that at the time when Adam ate the forbidden fruit, the Holy Christ was given to drink gall and vinegar at the Holy Cross' (13_1-bairalem-PV-G > M165-G1)

At the same time, there is evidence for verb movement to the position of the (missing) lower complementizer in historical German. Consider (40)a-b in which the higher complementizer is present and the finite verb of the dependent clause is fronted to the position of the lower one, also allowing for additional material to intervene. (40)a involves a clear case of left dislocation in the presence of *that* in Force°, i.e. the dependent finite verb moves to Fin°, the LD-XP *hurere vn̄ vnreíne menſchen* 'forticators and impure people' targets the specifier of an intermediate projection, presumably SpecTopP, while the resumptive pronoun *di* remains in SpecFinP. (40)b is a similar type of a correlative construction in which a frame-setting topic phrase, the temporal adverbial phrase *zeden ſelben ſtunden. do der erſte man giſchaffen wart in paradyſo* 'at the same time at which the First Man was created in Pardise' occupies a specifier position between ForceP and FinP, while the phrase resuming it and the verb target SpecFinP and Fin°, respectively:

(40) a. Ich ſage uch zware [...] *daz* hurere vn̄ vnreíne
I tell you.Dat truly that fornicators and impure
menſchen di*hāt* dekeín erbe ín deme riche
people they-have no legacy in this.Dat kingdom.Dat
des almehtigen gotis
the.Gen almighty God.Gen
'I tell you truly that fornicators and impure people have no legacy in the Kingdom of the Holy God' (13_2-rhfrhess-PV-G > M328-G1)

b. Unſ ſaget ǒch div heilige ſchrift. *daz* zeden
us.Dat tells also the holy scripture that at-the.DatPl
ſelben ſtunden. do der erſte man giſchaffen wart in
same hours when the first man created was in
paradyſo. zeder ſelben wile *wart* der gotiſ ſůn
paradise at.the same time was the God.Gen son
enphangen uon miner frŵen ſente mæRien
conceived by my.Dat Lady Holy Mary
'The Holy Scripture also tells us that at the same time when the First Man was created in Paradise, the Son of God was conceived by my Lady, the Holy Virgin Mary'
(13_1-bairalem-PV-G > M165-G1)

Under the assumption that OHG allows for complementizer doubling, incl. verb movement to the position of the lower complementizer, the structural representation of complements of negative verbs in affirmative and negative clauses in classical OHG can be pursued in the way represented in (41)a-b and (42):

(41) a. [$_{\text{Force}^\circ}$ ***thaz*** [$_{\text{Fin}^\circ}$ [$_{\text{IP/VP}}$ ...***ni***$_{\text{expl}}$-***Vfin***]]]
b. [$_{\text{Force}^\circ}$ ***ni***$_{\text{expl}}$ ... [$_{\text{Fin}^\circ}$ [$_{\text{IP/VP}}$ ....***Vfin***]]]

(42) [$_{\text{Force}^\circ}$ ***ni***$_{\text{expl}}$ ... [$_{\text{SpecFinP}}$ **XP** [$_{\text{Fin}^\circ}$ ***Vfin*** [$_{\text{IP/VP}}$ ...t$_{\text{XP}}$...t$_{\text{Vfin}}$]]]]

(41)a is the structure of complement clauses of verbs with an inherently negative feature, when these are used in an affirmative matrix clause. It is equivalent to (33)a above. (41)b exemplifies the same structure for matrix verbs under negation, shown in (33)b. (42), finally, is the derivation of *ni*-clauses in which the verb has moved to the position of an empty complementizer in Fin°. This structure is the source of later reanalysis leading to the raise of the 'a'V2 pattern found in late-OHG and MHG.

It is well-known that towards late OHG, the original preverbal negator *ni* is semantically reduced, and that it is reinforced by additional markers, to fulfil its genuine function related to polarity (Jäger 2008). At the same time, single (non-reinforced) *ne* is successively associated with expletive negation in MHG (Behaghel 1924, Pickl 2017, Breitbarth 2014 for Middle Low German). As the negative complementizer *ni* is lost, the structure in (42) is replaced by the one involving clause-internal expletive negation cliticized to Vfin. In addition, the clitic complex consisting of the expletive negator and the finite verb is moved to the left periphery, probalbly because in the respective contexts, this domain is still associated with expletive negation, and because the original clause-internal expletive negator *ne* is an appropriate exponent to lexicalize in this syntactic domain. The movement of the finite verb to the left is purely epiphenomenal, occurring on phonological grounds. Finally, with the loss of *ne* as lexical exponent of negation of any type, the respective 'a'V2-clause type disappears as well.

4 Conclusion

Starting from previous observations according to which aV2 arguments have a broader distribution in historical German than in modern German, the present article studied the complementation behaviour of selected clause-embedding predicates in corpora of OHG and MHG and determined the conditions under which aV2 order occurs in the data.

The investigation revealed that there are striking parallels in the typology of aV2-embedding predicates in historical German and in modern German. Well-accepted aV2-licensors, namely verbs of saying and doxastic predicates, select aV2 clauses from the very beginning of the attestation, while well-known aV2 blockers such as factive emotive, semi-factive and implicative verbs reject this type of complements throughout the attested history of German. However, verbs displaying a negative feature, such as non-assertive and negative implicative verbs seem to constitute a domain in which aV2 is temporarily present. The analysis shows, however, that first, superficial V2 in the complements of these verbs is only attested when the matrix verb is negated, and second, that it appears as the successor of a previously syndetic structure, while the original complementizer is lost already during the OHG period.

In view of these observations, the licensing of aV2 does not enforce a scenario requiring a typological shift in the properties of clause-embedding predicates over time but is rather related to changes in the inventory of lexical elements surfacing as complementizers in the complex C-domain of the clause, including their interaction with the expression of sentential and expletive negation in the history of German.

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Cecilia Poletto

On the licensing of null subjects in Old Venetian

Abstract: In this work I examine the distribution of null subjects in main and embedded declaratives and interrogatives in Old Venetian. I show that there is a clear asymmetry between declarative and interrogatives which has gone unnoticed in the literature, so that there are virtually no null subjects either in main or embedded interrogatives. I propose that this is due to a realitivized minimality effct of the wh-item interfering with the null topic in the high left periphery which binds the null subject in SpecT.

1 Introduction

The general aim of this work is to contribute to the micro-typology of verb second in Old Romance. In particular, I will explore the distribution of null subjects in an Old Romance variety, Old Venetian. The theoretical problem I will deal with is the same I have investigated for Old Italian (the Old Florentine written between the beginning of the XIII and the mid XIV century), in Poletto (2017), namely whether it is possible to detect an asymmetry between main and embedded clauses in the licensing of null subjects of the Old French type and how this is to be implemented in the V2 system. As already noted by Adams (1987), Roberts (1993), Vance (1997) among others, in Old French there is a clear split between main and embedded clauses in the distribution of null subjects. While in main clauses there are several cases of null subjects, they are rather rare in embedded domains. Zimmermann (2012) has also shown that null subjects in Old French are primarily a main clause phenomenon, although the percentages vary according to the text. On the basis of a general survey of thirteen texts from 1125 to 1666 he states that: "Old and Middle French are characterized by a distinct root-embedded asymmetry, in that expletive and referential subject pronouns are considerably more frequently expressed in embedded clause". On the other hand, Old Florentine does not have the same clear split between main and embedded clauses (see Poletto (2017), since embedded clauses also consistently allow for null subjects in contexts that are clearly not under bridge verbs. So, one might wonder whether Old Northern Italian varieties are more like Old French or like

Cecilia Poletto, Universität Frankfurt a. Main

https://doi.org/10.1515/9781501508141-009

Old Florentine. In this work I will consider two types of main and embedded clauses, i.e. declaratives and interrogatives in Old Venetian. I will show that the asymmetry holds only in declaratives, while interrogative clauses consistently display lexical subject pronouns both in main and embedded clauses, although in main clauses we observe subject inversion due to I to C.[1] In order to explain this distinction between the two clause types, I will propose an account based on the idea that null subjects are bound by null topics put forth by George Walkden in various works (2013, 2014, 2016). The reason why interrogatives do not allow for null subjects in Old Venetian is that the type of null topic is an operator-like element, which is sensitive to relativized minimality activated by the wh-item. The empirical basis I will use is a single text, the "Lo libro de Messer Tristano" also known as the "Venetan Tristan" in the edition by Aulo Donatello. The text dates from the end of the XIII century and the beginning of the XIV century and has been extensively investigated in Chiorboli (2018). The reason for analysing only this book is that using a single text allows us to restrict the possible variation in terms of speakers, since we have just one. This is particularly important in a period in which the language was not standardized and the possible span of variation among speakers was presumably higher than with the modern standard languages. The fact that the text is a translation from French is not a problem, since (as noted in Garzonio (2017), the Venetian work is a very free rendering of the French text and not a precise translation of the original. Furthermore, the text is rather long and contains hundreds of main and embedded interrogatives, which is necessary if we want to have a solid empirical basis. Other texts, like for instance the transcriptions of testimonies of Lio Mazor court, which are also very faithful to spoken language could not be used, since they contain very few interrogatives. I will limit the investigation to cases of referential subjects, since the aim is to investigate the properties of the null Topic associated to the null subject, and expletive subjects presumably do not have a null Topic associated to them. The article is organized as follows: In section 2 I will briefly summarize the theoretical account that has been traditionally provided for null subjects in Medieval Romance, in section 3 and 4 I will present the data for declaratives and interrogatives respectively and will show that there is a clear quantitative difference between the two types. In section 5 I will present the analysis stated in terms of relativized minimality (Rizzi 1990) according to the formulation proposed in Rizzi (2013). A brief overview of the problems left open concludes the article.

1 Differences in the distribution of null subjects in main and embedded clause are also known from the research on Old Germanic, in particular recent work by Farasyn and Breitbarth (2016), who notice that in middle low German the distribution of referential null subjects varies according to the person and to the main/embedded character of the clause so that first person null subjects are found also in embedded domains.

2 The traditional view on the main versus embedded asymmetry

It is a well-known fact that in modern Italian the pro subject of an embedded clause is typically interpreted as co-referent with the subject of the main clause, i.e. pro has a subject bias (see Carminati 2002):

(1) Gianni$_i$ ha salutato Mario$_j$ quando pro$_i$ é tornato a casa
Gianni has greeted Mario when pro is come to home
'Gianni greeted Mario when he came home'

(2) Gianni$_i$ ha salutato Mario$_j$ quando lui$_J$ é tornato a casa
Gianni has greeted Mario when he is come to home
'Gianni greeted Mario when he came home'

When a tonic subject pronoun is spelled out, it is generally interpreted as a different referent with respect to the subject of the main clause, either as another argument of the main verb or as another referent already present in the discourse (see Carminati 2002 for a detailed discussion). This type of anaphora resolution is known to occur also in other modern Romance languages.

Benincá (2006) notices that the system of OI (Old Italian) is different from the modern language, since embedded lexical subject pronouns can be coreferential with the subject of the main clause, as the following example shows.

(3) E così ne provò _ de' più cari ch'elli avea. (oFlor.; Testi fiorentini,74)
and so of-it tested3sg _ of-the most dear that-he had
"So he tested some of the best friends he had."

Since the same effect is found in Old French (see (4)), Benincá (2006) extends the traditional analysis on this asymmetry to OI and argues that just like in French, in OI null subjects are licensed through government by "I° to C°" movement and therefore missing in embedded clauses, which in general lack I to C movement.

(4) Si errerent _ tant en tele maniere qu'il vindrent en la praerie de Wincestre (OFr.; Artu, p.13)
so wandered _ so-much in such way that-they came in the prairie of Winchester
"They wondered so much in such a way that they arrived in the prairie of Winchester."

If this were the case also in OI, we should either find a clear asymmetry between main and embedded clauses as we find in French, or we should admit that OI was a symmetric V2 language like Icelandic.[2] In Poletto (2017) I showed that OI does not display as strong an asymmetry as Old French does. Furthermore, there are reasons to believe that OI was indeed an asymmetric V2 language, since typical V2 effects as the Tobler Mussafia law and the SpecC particle *sí* are generally found only in main clauses and are only very limited in embedded domains. This shows that the traditional explanation that null subjects depend on the I to C context cannot be applied to OI. As an alternative, I have proposed that Benincá was right in assuming that the system of OI is different from the modern language, but that the explanation in terms of government is not correct.[3] The alternative solution is that in OI different types of null Topics can license null subjects. Some of them, as Aboutness Topics are typically found only in main clauses,[4] others, like familiarity Topics can be found in main and embedded clauses. The differences found between main and embedded clause are due to the distribution of these two types of Topics. Suppose for instance that a language only has null Aboutness Topics, then we expect a French-like behaviour, where null subjects only occur in main clauses. This is actually the analysis that Walkden puts forth for Old English, where null subjects are indeed restricted to matrix domains. However, if a language also allows for familiarity Topics, then it should also have null subjects in embedded domains, since familiarity topics are known to occur also in embedded clauses. If a language has both, as this is the case in OI, we should find that the number of null subjects in main clauses is higher than the number in embedded clauses, since both Aboutness and familiarity Topics are possible, but also embedded clauses can have null subjects, since familiarity Topics are licensed also in embedded domains. This is precisely the situation I describe for Old Florentine in Poletto (2017). As for Old Venetian, Benincà (2006) notices that the coreference between a subject pronoun in embedded clauses with the subject of the main clause is also possible in Old Venetian, as the following clause attests:

(5) et levà _ lo rem et de-me _ sulo col et menà-me _ ço per lo braço , sì ch'el me lo scaveçà (oVen.; Lio Mazor, 18)

2 Although Benincá is not explicit about this, she seems to imply that OI is a symmetric V2 language with I to C movement in both main and embedded clauses, although this is probably not correct, as the lack of enclitics in embedded clauses, i.e. the lack of application of the Tobler Mussafia law, shows.

3 There is a general problem with the notion of government in the minimalist framework, so a restatement of the traditional analysis formulated in GB terms is a welcome result.

4 See Bianchi & Frascarelli (2010) on this.

and raised3sg the oar and hit3sg.me on.the neck and stroke3sg.me down the arm, so that he to-me.it broke3sg
'and he raised his oar and hit me on the neck and stroke me down the arm so that he broke it'

One might wonder, whether Venetian (and more generally Old Northern Italian varieties) has a French type system or an OI system: Wolfe (2016) has shown that Old Northern Italian was more similar to Old French in terms of distribution of non-subject initial main clauses, which are about 30% of the total. V3 sequences are attested but are mainly with a frame setter, and not with a left dislocated element followed by a focussed one. Furthermore, Wolfe notes that Old Venetian hardly displays V4 sequences (0,63%), which are possible in other Old Italian varieties as Old Florentine and Old Sicilian (11,57%). This means that the recursive type of left dislocation typical of modern Romance is not a property of Old Venetian, which in this respect works like the later stage identified by Wolfe for Old French and Old Spanish. According to Wolfe, this shows that Old Venetian was a ForceP V2 language and not a low FinP/FocusP V2 language like Old Florentine. This is also confirmed by the distribution of V1 found in Old Venetian by Wolfe. Old Venetian V1 is almost exclusively of the Germanic "narrative type" where the sentence begins with a verb of saying and requires a higher degree of deictic anchoring to the discourse. Cases of continuation of a Topic are rather rare, and rhematic Topics found in other Italian varieties are not attested at all. Wolfe attributes the fact that null Topics are scarce in ForceP V2 languages to the impossibility of the null Topic, which has already incorporated into C_{Top} to move to SpecForce. To complete the picture, Wolfe notices that the overwhelming order of complement clauses is SVO (Wolfe calculates 95,42% of the occurrences on the basis of the Lio Mazor text), with just a small percentage of embedded V2 clauses in the classical contexts known from Germanic languages. On this basis, the expectation is that the system of pro drop of Old Venetian works like Old French. As we will see, by investigating Old Venetian, it is possible to discover further interesting facts which take us to a better understanding of the type of null category located in the CP licensing the null subject argument in the SpecT position.[5]

5 Notice that even if we adopt a view without null subjects, and assume that verbal inflection contains an incorporated pronoun, or is +pronominal, or that pro drop languages do not have an EPP feature in TP, it is still necessary to explain how the reference of the subject is interpreted. So, what I will propose here can also be transposed to an account without pro.

3 Pro drop in declarative clauses

Wolfe (2015) considers the distribution of null subjects in main and embedded clauses on the basis of the Lio Mazor text and finds that the amount of null subjects in main clauses is 34,34% while the amount in embedded clauses is 10,85%. Furthermore, he notes that all cases of null subjects occur in embedded domains selected by bridge verbs, which allow for embedded V2. This confirms the relation between V2 and null subjects, which, as we will see, is not as direct as has been proposed in the literature so far.

If we consider the distribution of null subjects in main and embedded declarative clauses in the Tristano Veneto (from now on TV), we see that the distribution is similar to the one found by Wolfe for Lio Mazor: there is indeed a rather clear asymmetry between main and embedded clauses. Taking as a sample 500 main and 500 embedded declarative clauses, and excluding those with a lexical DP subject (which are 184 in main clauses and 140 in embedded clauses), we obtain a clear asymmetry between main and embedded clauses.

Table 1: distribution of lexical and null pronouns in declarative clauses.

	Main declaratives absolute numbers	Embedded declaratives absolute numbers	Main clauses percentages	Embedded clauses percentages
Lexical pronoun	171	331	54,11%	91,5%
Pro	145	29	45,89%	8,5%

While in main clauses null subjects amounts to 54,11%, in embedded clauses they are more limited and amount to about 8,5% of the cases. Since the existence of null subjects is not completely excluded from embedded domains, but the lower percentages could indicate that here we have to do with a typical embedded main clause phenomenon, which occurs in limited contexts, i.e. those contexts in which the main verb allows for a complete CP structure, which is entirely free. There are logically two possibilities to account for the distinction between bridge and non-bridge verbs: we can either assume that bridge verbs select for a bigger complement, i.e. a full ForceP than non-bridge verbs. Alternatively, we can adopt Haegemann´s (2012) intuition that those embedded clauses that do not allow for main clause phenomena are not "smaller" in any sense, but their left periphery is occupied by a null operator which prevents movements from the inner clause. In section 5 I will adopt this second hypothesis, which is more in line with the relativized minimality account I want to provide here.

Summing up, the traditional view that null subjects depend on I to C is not challenged by Old Venetian declarative clauses, which are similar to Old French texts, as expected seen the other properties already investigated in Wolfe (2015).

4 Pro drop in interrogative clauses

What really challenges the traditional analysis of null subjects as depending on I to C is the distribution of lexical pronouns in main and embedded interrogative clauses. Benincá (2006) notices that interrogatives are the clearest context in which the asymmetry of verb movement manifests itself, and proposes the following generalization:

(6) In Romance the CP is only blocked for V movement in dependent interrogatives.

This means that we should have the clearest case of asymmetry also concerning the distribution of lexical pronouns versus null subjects in main and embedded interrogatives. This is however not the case.

4.1 Main interrogatives

The sample I use here is the one extracted from the text by Chiorboli (2018), and contains in total 1193 interrogative clauses, 695 are main and 498 embedded interrogatives. Since we are looking for null subjects, subject interrogatives have been excluded from the corpus.[6] Since in the sample I could not find any distinction between yes/no questions and wh-questions, they are treated in the same way (the sample contains 265 main yes/no questions and 71 yes/no embedded clauses).

The position of the subject varies as expected according to the V2 constraint: in main clauses, both pronominal and nominal subjects are inverted with respect to the inflected verb. When the verb is a compound form, the subject is located between the auxiliary (or the modal) and the past participle (or the infinitive) as it is the case in modern Germanic languages.[7]

6 Chiorboli found 29 main subject interrogatives and 22 embedded interrogatives, they are disregarded in the discussion that follows.

7 The whole sample contains only 10 cases of main clauses where the subject precedes the verb, they all have the flavor of questions where there is a bias for a positive answer, as the presence of *dunqua* 'so' attests:

(7) a. Vedè vui questo levrier? (1,28)[8]
See you this greyhound?
'Do you see this greyhound?'

b. Fo questo lo re Artus? (370, 66)
Was this the king Arthur?

(8) a. «Signor, avé vui oldido queste novelle? » (479)
Sir, have you heard these news?

b. Dama, como hè questo sangue vignudo? (132, 12)
Lady, how is this blood come?
'Milady, how come there is blood here?'

Old Venetian also presents cases of vP internal subjects, as the modern variant does. The most cases have a subject followed by a relative clause, but there are also cases of pronouns, demonstratives or DPs without a relative clause modification:

(9) Dona, di'-me: quanto può eser allutanado de qua lo chavalier lo qual ha menado via la vostra fia?»
Lady, tell-me: how can be away from here the knight who has taken away the your daughter?
'Lady, tell me: how far can the knight who took your daughter be?'

(10) «Signor, ho fato io cosa che a vui plasesse?». (476)
Sir, have done I thing that to you pleased?
'Sir, did I do anything that pleased you?'

(i) donqua vui geri fio delo re Pelinor?» (373,32)
So you were son of-the king Pelinor?
'So, you were King Pelinor's son?'

(ii) *adonqua **io** me posso ben andar tuto asolto* quando el me plaserà?
So I me can well go all free when it me likes?
'So, I can go when I like?**'**

Notice that in spoken English this is exactly the context where inversion can be dispensed with. There are also cases in which a nominal subject is left dislocated, but it is always resumed by a pronoun:

(iii) *lo Cavalier dalo Scudo Vermegio era ello apreso quelli?»*
The knight of-the shield vermilion was he with them?
'Was the knight with the vermilion shield with them?**'**

8 The first number refers to the page, the second to the line of the Tristano Veneto in its Donadello edition

Table 2: null subjects in main and embedded interrogative clause.

	Main interrogatives absolute numbers	Main clauses percentages
Lexical pronoun	571	95%
Pro	29	5%

However, the difference with respect to declarative clauses in terms of null subjects is striking: of the 634 main interrogatives (subject interrogatives were obviously not considered) in the sample only 29 (4,5%) present a null subject. Considering only the contexts in which a subject pronouns occurs, i.e. 571 sentence, the 29 sentences with null subjects are 5% of the total, even less than embedded declaratives. However, the fact that null subjects exist in 5% of the cases, calls for an explanation. If we analyze the distribution of null subjects, we actually find that the majority of the cases are first and second person plural, which are exactly the same persons that in Old French license null subjects with the highest frequency. If we look a bit more in detail how null subjects are distributed we find that 14 of the 29 cases are either a) coordinated clauses as the following or b) have a vocative or a left dislocated subject just in front of the verb:

(11) «Che diremo nui et che faremo? (365, 17)
What say.fut. we and what do?
'What will we say and what will we do?'

(12) oi scudier, mo' per che casion me havé vogiudo vergognar,
hey esquire, now for which reason me have wanted shame?
'Hey esquire, what is the reason why you wanted to shame me?'

Interestingly, all these questions with null subjects have the flavor of special questions according to the definition provided by Obenauer (2006), i.e. a question whose answer lies outside the set of the standard answers. The same is true of the other 6 questions where the subject is also the addressee of the question:

(13) Mo', per qui adonqua l'avé fato?
Now, for whom then it have done?
'For whom on earth did you do this?'

Five cases involve the formulaic expression in (14), which alternates with a lexical subject pronoun[9]:

9 Notice that since Old Venetian is a VO language, these subjects are not extraposed like Old German ones, (15) is a case of a vP peripheral subject as those of modern Italian varieties.

(14) Or che ve dirè? (177, 19)
Now what you tell?
Now what will I tell you?

(15) Or che ve dirè io? (346, 9)
Now what you tell I?
Now what will I tell you?

We conclude that null subjects are possible in special questions. In several cases the subject is indeed present, but is represented by a vocative dislocated in front of the wh-item.

4.2 Embedded interrogatives

As expected, no subject inversion is found in embedded interrogatives. There are actually 1,89% of inversion cases, but if we consider that Old Venetian allows for vP internal subjects and exclude them from the count, we find that there are only two cases of embedded clauses where there is subject inversion of the Germanic type.

Of the 363 cases of embedded interrogatives with pronominal subjects[10] only 11 sentences display a null subject, i.e. only 3% of the clauses are pro drop. Furthermore, in three cases we see the same phenomenon found above with (positive or negative) coordination, i.e. it is possible to omit the subject pronoun in coordinated embedded interrogatives.

(16) a. qu'elli non saveva che conseyo elli devesse prendere, ni non saveva che deveva dir (14, 6)
That he not knew what advice he had.to take, nor not knew what had.to say
'that he did not know what advice he could follow, nor did he know what he had to say'

b. perqué ello non voleva çià che nigun lo devesse cognoser ni de qual regname fosse. (174, 18)
because he not wanted already that no one it had.to know nor of which realm were
'because he did not want that anyone got to know him or where he came from'

10 The rest 82 sentences have a nominal subject, which does not count here as a potential context in which a null subject could be licensed, since the subject is new.

Two further cases are ambiguous between embedded interrogatives and cases of relative clauses, which as we will see below, allow for null subjects:

(17) a. elo non saverave in qual parte andarave (148, 4)
He not knew in which part went
'he did not know where to go'

b. et sì ve dirè in che modo et in qual maniera lo farò prender (75, 13)
and yes you tell in which way and in which fashion it will take
'and I will tell you how and in which way I will have it taken'

Interestingly, two other cases have a topicalization internal to the wh-clause:

(18) a. et sì zercha lo re Artus se trovar lo podesse
And so searched the king Artus if find him could
'and the kind Artus tried to find him'

b. dapuò lo re li domandà como a lor era adevignudo
later the king him asked who to them was come
'later the king asked him how he had met them'

This leaves only two sentences which are real counterexample to the generalization that embedded interrogative, just like main interrogatives do not license null subjects.

(19) a. Et savé vu perché ve'l digo? (135, 7)
And know you why you it tell?
'And do you know why I am telling you?'

b. alora elo domandà in qual parte era arivadi
then he asked in which part were arrived
'then he asked where they had arrived'

Although the ideal case would be to reduce also these two examples to some sub-regularity, we can conclude that pro drop in embedded interrogatives is very rare.

5 Analysis

Summing up what we have seen above, we notice that Old Venetian displays a double asymmetry: the first asymmetry is the one between main and embedded declaratives, since null subjects are rather limited in embedded declarative clauses,

while they are rather widespread in main clauses. The second asymmetry is the one concerning sentence type, since we have seen that in interrogative clauses we never have null subjects (except for special questions) either in main or embedded domains, i.e. irrespective of I to C. So, we do not only have to explain the asymmetry between main and embedded clauses, but also the asymmetry between declaratives and interrogatives. In order to make sense of the distribution described above, I will start with the observation that the existence of a clear asymmetry between main and embedded clauses does not necessarily mean that null subjects are directly related to V2 in the sense that it is the verb in C that licensed the null subject in a government configuration as traditionally proposed. What the distribution of lexical and null subjects show is that pro drop is a main declarative clause phenomenon, and not a main clause phenomenon per se. Notice furthermore that V2 is not the only main clause phenomenon to which we can reduce null subjects. Aboutness Topics are also well known for being a main clause phenomenon, and more generally all those elements that provide the discursive frame and anchoring to the situation of the utterance (like scene setting time and locative adverbials) are also typically only found in main clauses, and can only be uttered in embedded clauses in rather restricted contexts, like under bridge verbs exactly like V2. Hence, the fact that null subjects are found only in main clauses in Old French and Old Venetian does not really prove that pro drop is directly related to I to C, but it can also mean that pro drop is licensed by an aboutness topic under a locality condition similar to the one found for anaphors, i.e. the two must be in the same clause.[11] If we take into account interrogative clauses, which force I to C even in residual V2 languages like English or standard French (see Rizzi 1991), we notice that the licensing conditions of a null subject are different. However, according to Benincá´s (2006) generalization the asymmetry between main and embedded interrogatives this should be the clearest case in which the main/embedded asymmetry manifests itself. The standard theory thus predicts that there is a rather sharp asymmetry so that main interrogatives allow for null subjects while embedded interrogatives do not, contrary to facts. The asymmetry between interrogatives and declaratives shows that the traditional analysis of pro drop being licensed by V2 has to be abandoned in favour of an alternative account. I adopt here Walkden´s (2013) idea (also based on Sigurdsson 2011) that null subjects are bound by a null Topic located in the left periphery which licensed the null subject in SpecT. Walkden shows that in Old English only third person null subjects in main clauses are possible. According to his analysis, this is so because Aboutness Topics are only possible in main clauses and this type of topics are almost exclusively third person. First and second person null subjects

11 It is true that there are long distance anaphors, though they are not found in these varieties.

(which are possible in other languages, like for instance Finnish) are bound by the logophoric agent or patient and undergo different licensing conditions with respect to Aboutness Topics. This explains why for instance Old English only displays third person null subjects while Finnish, Hebrew or Marathi only allow for first and second person null subjects: they are two different types of topics, since the logophoric patient and agent are generally given in the discourse, and not necessarily have an aboutness property. In Poletto (2017) I put forth the analysis that Old Florentine allows for an additional type of null Topics to directly probe into SpecT and bind a null subject there, namely familiarity Topics. In Old Florentine null Aboutness Topics are licensed by I to C, so only null subjects connected to Aboutness Topics are limited to main clauses, null subjects bound by familiarity Topics are not. Since they are allowed for in embedded clauses as well, Old Florentine does not display a robust asymmetry in terms of licensing of null subjects but is still an asymmetric V2 language. This is due to the fact that a null subject can be licensed by different types of topics, only one of which is restricted to main clauses. Thus, dissociating I to C from the licensing of null subjects provides the correct setting. If we transpose this analysis to Old French, this is a language where both the logophoric agent and patient and Aboutness Topics are licensed in main clauses, but there is no null familiarity Topic licensed in embedded clauses. This means that first, second and third person null subjects are possible in Old French but only in main clauses, since there are no familiarity topics, which also survive embedded environments. In Wolfe´s terms, Old French only allows for sentence external Topics higher than ForceP and not for the type of internal Topics located between ForceP and FinP. This explains why the asymmetry between main and embedded clauses is so clear cut in Old French but also why Old French allows for null subjects of all persons, differently from Old English, which lacks logophoric patient and agent.

Still framing the analysis of Old Venetian in the theory proposed by Walkden with the addition of familiarity topics, we can make sense of the double asymmetry noticed above. Similarly to Old French, Old Venetian is also a language where null familiarity Topics, if they are licensed at all, do not directly probe into SpecT and license a null subject there, so that the rate of embedded null subjects is rather low. Once we have accounted for the main versus embedded asymmetry in terms of Walkden´s theory, we still have to explain why standard interrogative clauses do not work in the same way. The hypothesis I intend to put forth is that the relation between the null Aboutness Topic or logophoric fist/second person Topic is different from the relation that Topics, i.e. left dislocations have nowadays with the clitic in the modern Italian varieties. Old Venetian topics are more similar to modern English topicalization, which contains a null operator and therefore are blocked by a wh-item through relativized minimality. This is also clearly evident because in Old Venetian topica-

lized objects need not be resumed by a clitic, while this is mandatory in the modern variant. What has changed between Old and Modern Venetian is thus the relation between the Topic and the element located in the sentence internal position: Old Venetian topics imply the presence of an operator, while modern Venetian ones do not. If this is correct, we have a means to encode the double asymmetry through featural relativized minimality. According to Rizzi, there are different classes of elements which display an intervention effect among each other. Rizzi assumes that the intervention effect is triggered by the fact that they have at least one feature (possibly more than one) in common. For instance, the second class contains quantificational elements like wh-items, negation, focus and measure elements has a common Q feature, which we could translate as the requirement to open a set of alternatives. However, Rizzi places Topics as a class on their own, since they do not interfere with the quantificational class, at least in modern Italian. Suppose however that Wolfe is right in assuming that Old Venetian is similar to Old French in not allowing sentence internal topics, but only Frame Topics higher than ForceP. This type of topics has a different endowment in terms of features with respect to sentence internal Topics of the modern Italian type. So we can hypothesize that what we are dealing with here is indeed a case in which a wh-item blocks the relation between the Aboutness/ Logophoric Frame Topic occurring only in main clauses and probing into the SpecT position. If this is correct, we have to identify the feature which is common to Frame Topics and wh-items. I propose that this feature is clearly not Q, otherwise pro drop would be blocked also in all contexts in which there is Focus or a negative marker, which is not the case. What wh-items found in standard questions and frame Topics have in common is that the value of the null category they have in their internal structure must be constrained by the context. Standard questions generally imply a set of possible values for the variable, which is provided by the context, so when asking a standard question, the possible set of values for the variable must be restricted by the context, i.e. it is first searched on the basis of the propositions contained in the common ground. The same is true of the value of the null frame Topic. This necessity to refer to an entity already present in the context as the first step to determine the value of the null category, is the property that causes the interference between wh-items and Frame Topics. This analysis thus predicts that null subjects are blocked either in those contexts in which aboutness topics are not licensed, like embedded clauses, or in those contexts in which there is already another element that is performing the same value search procedure in the context. This means that in all other cases in which the value of the variable is not searched in the context should be fine. The first case of this type are relative clauses, which allow for pro drop, as noted above.

(20) a. tanto ne sè smarido qu'ello non -ssa quello che die dir (75, 13)
So of it was lost that he not know what that must say
'he was so lost that he did not know what to say'

b. sì qu'ello non -ssa ciò che debia far (135, 7)
so that he not know what that has.to do
'so that he does not know what to do'

Relative clauses also contain a wh-item, but its value is not determined by the context, but by the internal or external head of the relative clause (I adopt here the analysis proposed in Cinque 2013 and Sanfelici and Poletto 2015). The second argument is that, as we have seen above, special questions do tolerate pro drop. This is perfectly in line with the present hypothesis, since special questions have been defined by Obenauer (2006) precisely by the fact that in these contexts, the value of the wh-variable has to lie outside of the standard set of answers, i.e. outside the context. This means that it is not the Q feature that is responsible for the minimality effect found in main interrogatives that blocks the relation between the null Topic and the null subject in SpecT. It is a feature that encodes a procedure of reference to the context, which is found only in standard questions. Hence, neither relative whs nor special whs interfere with null Frame Topics, since they do not use the same search in the context procedure that standard whs and null subjects use. This explains why the cases of null subjects we saw above concentrate in special questions, since the value of their variable is precisely not constrained by the context. It also explains why main interrogatives have slightly more cases of null subjects with respect to embedded ones: special questions are known to occur far more frequently in main contexts than in embedded ones, due to the fact that only few main verbs allow for non standard questions as their complements.

6 Concluding remarks

In this article I have shown that the asymmetry between main and embedded declaratives which holds for the licensing of pro drop in Old Venetian as it does in Old French is not found in interrogative domains. In these cases null subjects are very restricted irrespective of the main/embedded status of the clause, although there is clearly I to C movement in main interrogatives, as attested by regular subject inversion of the Germanic type. This means that the direct link that has been assumed between I to C and pro drop in Old Romance by Benincá cannot be maintained. I have proposed an alternative account in the terms first

put forth by Walkden (2013): null subjects are licensed by the presence of a (null) Topic. Topics can be of different types, and depending on the null Topic that can be licensed in a given language, we obtain a different distribution across clause types and persons in different languages. Old Venetian matches Old French in allowing only Frame Topics, i.e. the highest types of Topics located higher than Force. However, the value of null Frame Topics must be interpreted according to the discourse, more precisely according to the propositions present in the common ground of the ongoing conversation. However, the same is also true of wh-items, whose variable is also determined on the basis of a standard set of alternatives provided by the context. This mechanism is the one that triggers the blocking effect between interrogative wh-items and Frame Topics. Other types of wh-items, as relative ones, or those found in special questions, whose value is interpreted according to a different mechanism, do not have any effect on Frame Topics, and null subjects are indeed possible in these contexts. This is more generally interesting since it helps us to identify the content of one more feature in relativized minimality. It remains to be seen whether other languages, in particular Old French, display the same effect. This is left to future research.

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Joachim Sabel

Verb third as Cluster movement in German

Abstract: In this paper, I analyze specific syntactic properties of verb third sentences in German. It is argued that verb third is derived from the process of XP-cluster formation, i.e. a derivation in which elements representing a complex pre-field such as [$_{CP}$ α β [$_{C'}$ V ...]] are merged by an adjunction operation [α[α β]] in which a maximal projection β is adjoined to another X^{max} α similar to heads in clitic clusters or morphemes in verb movement operations in the middle field (TP) before the multi-segmental element moves higher up into the C-system. My analysis implies that verb third (V3) sentences in German can be regarded as a variant of verb second sentences because only one constituent precedes the finite verb in C^0. The possibility of XP-cluster-movement in V3-sentences is linked to the scrambling (free constituent order) nature of German. Other scrambling languages such as, for example, Persian, Japanese and Korean, also show XP-cluster formation with subsequent cluster movement but without the combination of the V2-constraint. Further potential analyses of the V3-phenomenon in German, such as the multiple specifier analysis and the headless VP-fronting analysis are compared to the cluster analysis from an empirical and theoretical point of view.

1 Introduction

The verb-second word order in German is commonly described as movement of the finite verb into the second position of the sentence (C^0) followed by movement of exactly one arbitrary constituent not necessarily the subject, cf. (1b-c), into the position that precedes the verb (Spec CP) as illustrated in (1).

Note: This paper is a write-up of a talk I have presented in 2015 at the V2-workshop in Wuppertal and at the GGS-meeting 2016 in Leipzig. I would like to thank the participants for their comments, especially Werner Frey, Hans-Martin Gärtner, Joachim Jacobs, Horst Lohnstein, Gereon Müller, Cecilia Poletto, Susi Wurmbrand, and Hubert Truckenbrodt.

Joachim Sabel, Université catholique de Louvain, Belgium

https://doi.org/10.1515/9781501508141-010

(1) a. [$_{CP}$ Peter [$_{C}$ hat] das Buch gestern gelesen].
Peter-nom has the book-acc yesterday read

b. [$_{CP}$ Das Buch [$_{C}$ hat] Peter gestern gelesen].
the book-acc has Peter-nom yesterday read

c. [$_{CP}$ Gestern [$_{C}$ hat] Peter das Buch gelesen].
yesterday has Peter-nom the book-acc read
"Peter has read the book yesterday."

The examples in (2) violate the V2-order. They represent complex pre-fields with multiple elements occupying the sentence-"pre-field" (Spec CP) position. Examples of this type, although with different properties, are frequently attested in Old High German (Tomaselli 1995, Axel 2007). Modern German has more restricted word order possibilities in general. Nevertheless, complex pre-fields are still attested with certain elements appearing in a certain order. The example in (3a) in contrast to (2) is perfectly grammatical as long as the elements in Spec CP appear in a certain order, cf. (3b).

(2) a. *[$_{CP}$ Peter das Buch [$_{C}$ hat] gestern gelesen].
Peter-nom the book-acc has yesterday read

b. *[$_{CP}$ Das Buch Peter [$_{C}$ hat] gestern gelesen].
the book-acc Peter-nom has yesterday read

(3) a. [$_{CP}$ Dauerhaft genügend Studienplätze [$_{C}$ garantiert]
lastingly enough university-places-acc guarantees
der neue Bildungsminister].
the new minister-of-education-nom

b. *[$_{CP}$ Genügend Studienplätze dauerhaft [$_{C}$ garantiert] der
enough university-places-acc lastingly guarantees the
neue Bildungsminister].
new minister-of-education-nom

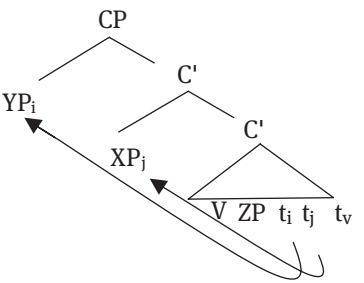
The construction in (3a) is usually called the "V3-construction" even though more than two constituents can precede the finite verb, giving rise to V4 or V5 orders.

One question that I will address in the following is what are the restrictions for V3 order, i.e. how can we account for the difference between the grammatical examples (1) and (3a) on the one hand, and the ungrammatical examples (2) and (3b) on the other hand? I will also address the question as to whether German is not a strict V2 language at all with V3 sentences such as (3a) representing an alternative sentence type or whether V3 sentences are, in fact, capped V2 sentences with a

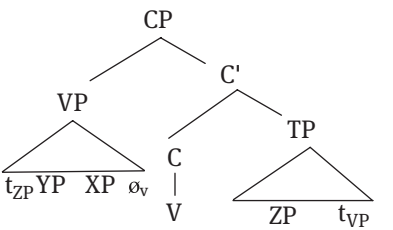
special type of derivation. I will argue that the latter is the case based on a discussion of the phrase structural status of the left periphery in sentences such as (2)-(3).

Several analyses have been proposed for this construction, i.e. analyses relying on multiple preposing (in a way like multiple fronting to multiple specifiers (4a) (cf. Speyer (2008)), or, alternatively, analyses relying on fronting of one constituent, as in (4b) (Fanselow 1991, 1993; Müller 1998:260ff; 2017 and Müller 2005). In this article, I will present a new analysis. I argue that the V3 construction is in fact an instance of a more general case of multiple fronting that is derived like clitic cluster fronting and multiple wh-fronting construtions in languages such as Spanish and Bulgarian (Sabel 2001, 2003). Hence, I am going to propose the alternative analysis in (4c). As illustrated below in (4c), YP and XP form a complex constituent that is derived by adjoining XP to YP. Then the complex category is moved into the Spec CP position.

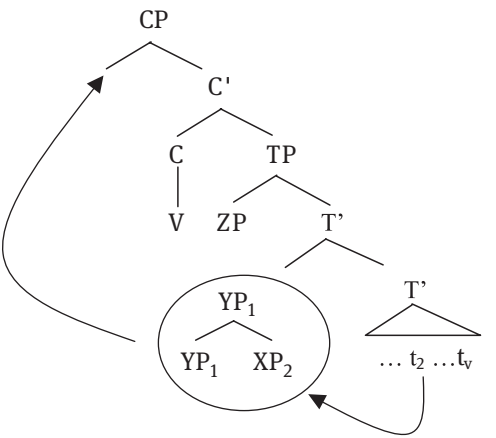
(4) a. *Multiple Specifiers*



b. *VP-Movement without the verbal head*



c. *Cluster Analysis*



Evidence for the analysis in (4c) is based on certain properties of the construction such as serialization patterns, locality restrictions, scope and island effects.

2 Restrictions on serialization in complex prefields

The order of multiple elements in complex prefields such as (3a) is identical to the order of these elements in their base position in the middle field (in TP). All V3 cases with elements that have a fixed base position follow this serialization restriction. It can be summarized as follows:

(5) *Generalization on order preservation in Spec CP* (OPCP)
For any XP α, β, if α c-commands β at the derivational step of external merge, then α precedes β after internal merge of both elements into Spec CP.

Given an ordering α > β in a V3-sentence, the first element α is always base-generated in a structurally higher position than the element β to its right. In a pre-field filled with three elements with the linear order α > β > γ, α asymmetrically c-commands β and β asymmetrically c-commands γ in the base structure.

The effects of (5) can be illustrated with several different elements and with different consequences but in all cases, an asymmetry exists between the base and the derived order of the elements. In the case of certain adverb orders, for example, only the base-generated order α > β is allowed, whereas the order β > α is ungrammatical (cf. (3)).

In the case of certain PP orders, it has to be shown with tests such as question answer pairs with information focus (i.e. with informational-structural contexts where the order β > α is much more restricted than the base order) that α > β represents the base order. The base-generated order can furthermore be accessed from scope ambiguities, from tests with informational focus, and the absence/presence of pair list readings in wh-quantifier interaction structures.

2.1 The OPCP and AdvP – DP orders

In (6a), we have a combination of a subject and a sentence adverb in the pre-field with the sentence adverb preceding the DP subject. (6b) shows that the inverse order is excluded. Hence, the contrast shows the restrictions on order in the pre-field already mentioned.

(6) a. Vermutlicherweise$_j$ die defekte Mechanik$_i$ führte [t$_j$ [$_{TP}$ t$_i$ zu
presumably the defective mechanics led to
dem Unfall]].
the accident
b. */??Die defekte Mechanik vermutlicherweise führte zu dem
the defective mechanics presumably led to the
Unfall.
accident

The examples in (7) illustrate that, on the other hand, both orders of these elements are possible in the middle field.

(7) a. dass vermutlicherweise die defekte Mechanik zu dem
that presumably the defective mechanics to the
Unfall führte
accident led
b. dass *die defekte Mechanik* vermutlicherweise *t* zu dem Unfall führte

Following Frey and Pittner (1998), Frey (2003), we can assume that the (evaluative) sentence adverb is base-generated in a position higher than the derived subject position. Hence, (7a) reflects the base order and (7b) is derived by scrambling of the subject in front of the adverb.

Frequency adverbs, such as *dauerhaft* (lastingly) in (8) are base-generated below the subject position and therefore also below evaluative sentence adverbs such as *vermutlicherweise* (probably) in (6)-(7) (cf. *vermutlicherweise* > *dauerhaft* vs. ?* *dauerhaft* > *vermutlicherweise*) but higher than the complement:

(8) a. *Der neue Bildungsminister* hat vermutlicherweise *t* dauerhaft
the new minister-of-education has presumably lastingly
genügend Studienplätze garantiert
enough university-places guaranteed
b. **Der neue Bildungsminister* hat dauerhaft *t* vermutlicherweise
the new minister-of-education has lastingly probably
genügend Studienplätze garantiert
enough university-places guaranteed

The prediction for V3-sentences based on (5) is borne out as can be seen in (9). The externally merged element α that is externally merged later than β has to precede β in Spec CP*:*

(9) a. Dauerhaft$_j$ genügend Studienplätze$_i$ garantiert der neue
Lastingly enough university-places guarantees the new
Bildungsminister t_j t_i.
minister-of-education
b. *Genügend Studienplätze$_i$ dauerhaft$_j$ garantiert der neue
Bildungsminister t_j t_i.

Note that, as with (6) and (7), a derivation involving movement (scrambling) of the lower base-generated element in front of the higher element, although grammatical (10b), cannot be the input for complex pre-field formation (9b); i.e. only (10a) can. Any analysis of V3-sentences has to exclude this undesireable derivation with scrambling (as in (10b)) preceding complex prefield formation (as in (9b)). I will propose a solution to this problem at the very end of this paper.

(10) a. dass der neue Bildungsminister dauerhaft genügend
that the new minister-of-education lastingly enough
Studienplätze garantiert
university-places guarantees
b. dass der neue Bildungsminister *genügend Studienplätze* dauerhaft *t*
garantiert

Further V3-sentences with DPs will be discussed in Section 2.5. In the next section, I turn to V3-examples with multiple AdvPs.

2.2 The OPCP and AdvP – AdvP orders

Two approaches are generally associated with the classification of the base positions of adverbs. The first approach analyzes adverbs based on their positional distribution (Cinque 1999), and the second approach classifies adverb positions as correlates of semantic properties (Ernst 2002). According to Cinque (1999), there exists a universal hierarchy of functional projections in which adverbs are base-generated in a fixed relative order and sequences of adverbs that violate this order will result in an ill-formed sentence (see also Jackendoff 1972, Alexiadou 1997 and Ernst 2002).

Given a fixed order in which multiple adverbs are base-generated, the predictions based on (5) can also be tested. An externally merged adverb α that was externally merged later in the base structure than an adverb β has to precede β also in the complex prefield. For example, in sentences with a high sentence adverb and a structurally low manner adverb, the higher adverb has to precede the lower

one in the derived (as well as in the base) structure. This prediction is borne out as can be seen from the following examples. Example (12) shows the ordering restrictions for the base order and (11) illustrates that the same order of adverbs is found in Spec CP:

(11) a. Sicherlich$_j$ gut$_i$ hat Peter t_j die Prüfung t_i bestanden.
certainly well has Peter the exam passed
b. *Gut sicherlich hat Peter die Prüfung bestanden.
well certainly has Peter the exam passed

(12) a. dass Peter sicherlich die Prüfung gut bestanden hat.
that Peter certainly the exam well passed has
b. *dass Peter gut die Prüfungs sicherlich bestanden hat.
that Peter well the exam certainly passed has

Coming back to examples with evaluative and frequency adverbs as in (8), we observe again that the base order has to be retained in a V3 sentence:

(13) a. Vermutlicherweise dauerhaft hat der neue Bildungsminister
presumably lastingly has the new minister-of-education
genügend Studienplätze garantiert.
enough university-places guaranteed
b. ?*Dauerhaft vermutlicherweise hat der neue Bildungsminister
lastingly presumably has the new minister-of-education
genügend Studienplätze garantiert.
enough university-places guaranteed

Finally, consider the relation between frequency and manner adverbs.

(14) a. dass das Ergebnis selten korrekt gewesen ist.
that the result rarely correct been is
b. ?*dass das Ergebnis korrekt selten gewesen ist.
that the result correct rarely been is
"(that) the result has been rarely correct."

(15) a. Selten$_j$ korrekt$_i$ ist das Ergebnis t_j t_i gewesen.
rarely correct is the result been
b. ?*Korrekt$_i$ selten$_j$ ist das Ergebnis t_j t_i gewesen.
correct rarely is the result been
"The result has been rarely correct."

The frequency adverb in (14) has to precede the manner adverb in the base-generated structure and it has to precede it in the derived structure as well, as shown in (15). Therefore, the OPCD makes the correct prediction with respect to adverb ordering in V3-sentences.

2.3 The OPCP and AdvP – PP orders

In this section, I will discuss examples illustrating that the relations between adverbs and PPs also confirm the OPCP. Path and directional PPs are arguably base-generated more closely to the verb than manner adverbs (manner adverb > PP (Path)) and the sentence negation in German ((sentence negation > PP (goal/direction)) (16)-(17):

(16) a. Franz Beckenbauer lief langsam über das Fußballfeld.
Franz Beckenbauer walked slowly across the soccer-field
b. *Franz Beckenbauer lief über das Fußballfeld langsam.
Franz Beckenbauer walked across the soccer-field slowly

(17) a. Peter ist nicht nach Honolulu geflogen.
Peter is not to Honolulu flown
b. *Peter ist nach Honolulu nicht geflogen.[1]
Peter is to Honolulu not flown
"Peter has not flown to Honolulu."

The corresponding examples with complex prefields confirm again that the OPCP has to be respected. Only those V3 sentences are grammatical that retain the order of adverb and PP as in (16a)/(18a) and (17a)/(19a):[2]

1 Irrelevantly for the present discussion, the sentence is grammatical with the constituent negation reading and contrastive focus:

(i) Peter ist nach Honolulu nicht geflogen, sondern mit dem Schiff gereist.
"Peter has not flown to Honolulu but travelled with the ship."

2 We have do distinguish the examples in the text from cases with adverbs such as locative and evaluative adverbs that can take PP complements. These examples have cleary a different derivation from (17)-(19) and also allow for the inverted order of the elements in Spec CP (probably derived by AdVP-internal scrambling after movement of the complex constituent to Spec CP.):

(i) a. [Draußen im Garten] hat Adrian Fußball gespielt.
outside in-the garden has Adrian-nom soccer-acc played

(18) a. Langsam$_j$ über das Fußballfeld$_i$ lief Franz Beckenbauer t_j t_i
slowly across the soccer-field walked Franz Beckenbauer
b. ?*Über das Fußballfeld langsam lief Franz Beckenbauer
across the soccer-field slowly walked Franz Beckenbauer

(19) a. Nicht$_j$ nach Honolulu$_i$ ist Peter t_j t_i geflogen.
not to Honolulu is Peter flown
b. *Nach Honolulu nicht ist Peter geflogen.
to Honolulu not is Peter flown
"Peter has not flown to Honolulu."

In example (19a), negation may scope either over the following PP or over the whole sentence (see also Jacobs 1986, Büring and Hartmann 2001). I will discuss this phenomenon in section 4, when I present my analysis of V3-sentences.

As alread pointed out in the introduction, more than two elements are allowed to appear in the German pre-field. This is shown in the following examples with adverbs and PPs. I consider the fronting of two elements first. Starting from the temporal adverb> comitative > directional (goal) PP base structure in (20), we can predict the possible orders in complex pre-fields in (21):

(20) dass Maria [morgen] [mit ihm] [nach Berlin] fahren will.
that Mary tomorrow with him to Berlin to-drive wants

b. [Im Garten draußen] hat Adrian Fußball gespielt.
in-the garden outside has Adrian-nom soccer-acc played

(ii) a. [Unabhängig von mir] hat sie eine Entscheidung getroffen.
independently of me has she-nom a decision-acc made
b. [Von mir unabhängig] hat sie eine Entscheidung getroffen.
of me independently has she-nom a decision-acc made

These examples involve XP-internal movement, in the sense that a complex XP is base-generated and internally re-ordered. A similar explanation can be applied to the following examples with DP-PP order (Müller 2003, 2005):

(iii) a. [*[Zum zweiten Mal]* [die Weltmeisterschaft] *t*] errang Clark 1965 ...
for second time the world-championship won Clark 1965
b. [*[Auf den ersten Blick]* [ein Schnäppchen] *t*] ist dabei der
at the first glance a bargain is thereby the
T-DSL-2000-Anschluss ...
T-DSL-2000-connecntion

(21) a. Morgen$_j$ nach Berlin$_i$ will Maria t_j mit ihm t_i fahren.
tomorrow to Berlin wants Mary with him to-drive
b. Morgen$_j$ mit ihm$_i$ will Maria t_j t_i nach Berlin fahren.
tomorrow with him wants Mary to Berlin to-drive
c. Mit ihm$_j$ nach Berlin$_i$ will Maria morgen t_j t_i fahren.
with him to Berlin wants Mary tomorrow to-drive

Other orders for pre-field elements such as the order directional > temporal instead of (21a), or comitative > temporal order instead of (21b) and directional > comitative order instead of the order in (21c) are strongly deviative. This is expected given the base order in (20) and the OPCP.[3]

As discussed in the following section, in contrast to adverb orders already discussed in 2.2 and in contrast to the order of adverbs and structurally very low PPs as discussed in the preceding section, higher PPs scramble freely in German like DPs, as already shown in 2.1 with examples (7b) and (10b). Therefore, besides the order of the three elements in (20), many different orders for the temporal adverb and the PPs in the middle field are possible.

Consider next the fronting of three elements. The base order of adverb and PPs in (20) predicts that (22i) is the only possible order for a complex pre-field that is filled with three elements. The V3-sentences in (22ii) all violate the OPCP and are in fact bad.

(22) i. Morgen$_k$ mit ihm$_j$ nach Berlin$_i$ will Maria t_k t_j t_i fahren.
tomorrow with him to Berlin wants Mary to-drive

ii. a. ??/*Morgen nach Berlin mit ihm will Maria fahren.
b. ??/*Mit ihm nach Berlin morgen will Maria fahren.
c. ??/?*Nach Berlin morgen mit ihm will Maria fahren.
d. *Mit ihm morgen nach Berlin will Maria fahren.
e. ??/?*Morgen nach Berlin mit ihm will Maria fahren.
f. *Nach Berlin mit ihm morgen will Maria fahren.

3 Comma intonation could rescue the inverse orders that violate the OPCD, so for example, (i) with a long pause between *nach Berlin* and *morgen* is possible:

(i) Nach Berlin, morgen will Maria mit ihm fahren.
to Berlin tomorrow wants Mary-nom with him to-drive

I assume that this construction involves coordination with a phonetically empty coordinative head, i.e [$_{\&P}$ *nach Berlin* [[$_{\&}$ ø] *mit ihm*], hence a different base-generated structure. The examples in (21) are equally possible with comma intonation but in contrast to (i), comma intonation is not necessary to form a grammatical sentence. Comma intonation as in (i) cannot rescue elements that may not be coordinated. As will be argued below, this prediction is borne out.

2.4 The OPCP and PPs

Based on a suitable subdivision of prepositional classes, Schweikert (2005) has shown that the base orders of PPs in German that modify the VP follow a rigid hierarchy. However, given that German is a scrambling language the order of PPs like the order of DPs is relatively free in this language. Syntactic tests have shown that the hierarchy (23) is mapped onto the base structure, i.e. determines the order in which external merge applies to PPs before other orders may be derived by scrambling (see Schweikert 2005). The relevant evidence is based on scope ambiguities, question answer pairs with informational focus, and the absence/presence of pair lists readings in wh-quantifier interaction structures.

(23) Evidential (z.B. *gemäß* 'according to'...) > Temporal (*am/um/im* ... 'on/at/in ...') > Locative (*in/hinter/vor/neben/auf/unter/über* ... 'in/behind/in front of/beside on/under/above ...') > Comitative (*mit* ...'with ...') > Benefactive (*für* ... 'for ...') > Reason (*wegen* ... ''because of ...'') > Source (*von* ...'from ...') > Goal (*nach* ...'to ...') > Malefactive (*gegen* ...) > Instrumental (*mit*... 'with ...')/Means of Transport (*mit* ...'by/with ...')/Path (*über* ...'through ...') > Matter (*über* ...'about ...') > Manner (*auf/mit* ... 'in/with ...')

Concerning V3-sentences with multiple PPs, I have already shown in the preceding section that the order path PP > comitative PP is excluded in V3 constructions (see (22.ii)) and that the comitative PP has to precede the path PP. According to (23), an instrumental PP precedes a path PP as well and is base-generated in a higher position than a path PP (24a). The order in (24b) is derived by scrambling of the lower PP:

(24) a. Der Arzt hat mit der Lupe in Marias
the doctor-nom has with the magnifying-glass into Mary's
Mund geblickt.
mouth looked

b. Der Arzt hat *in* *Marias* *Mund* mit der
the doctor-nom has into Mary's mouth with the
Lupe *t* geblickt.
magnifying-glass looked

Although (24b) is a possible word order inside TP, it cannot be the input for a V3 sentence, as shown in (25). This asymmetry between middle-field constituent

order and constituent order in Spec CP was already observed in the preceding sections:[4]

(25) a. Mit der Lupe$_j$ in Marias$_i$ Mund hat der
with the magnifying-glass into Mary's mouth has the
Arzt geblickt t_j t_i.
doctor-nom looked

b. ?*In Marias Mund$_i$ mit der Lupe$_j$ hat der
into Mary's mouth with the magnifying-glass has the
Arzt geblickt t_j t_i.
doctor-nom looked

The same facts can be observed with temporal and locative (see (26)-(27)) and locative and malefactive PPs (cf. (28)-(29)). Although only one order is possible in the pre-field (27)/(29), the order inside TP is free with respect to both PPs (26)/(28).

(26) a. dass sich vor zwei Tagen auf dieser Straße ein schwerer
that Refl. before two days on this road a serious
Unfall ereignete
accident occurred

b. dass sich *auf dieser Straße* vor zwei Tagen *t* ein schwerer
that Refl on this road before two days a serious
Unfall ereignete
accident occurred
"A serious accident occurred on this road two days ago."

(27) a. Vor zwei Tagen$_j$ auf dieser Straße$_i$ ereignete sich ein
before two days on this road occurred Refl a
schwerer Unfall t_j t_i.
serious accident-nom

4 This also holds for both PPs in (20)-(22), as illustrated below. In TP, The PPs may appear in both orders:

(i) a. dass Maria morgen [mit ihm] [nach Berlin] fahren will.
that Mary-nom tomorrow with him to Berlin to-drive wants

b. dass Maria morgen *[nach Berlin]* [mit ihm] *t* fahren will.
that Mary-nom tomorrow to Berlin with him to-drive wants

b. ?*Auf dieser Straße vor zwei Tagen ereignete sich ein
on this road before two days occurred Refl a
schwerer Unfall t_j t_i.
serious accident-nom
"A serious accident occurred on this road two days ago."

(28) a. dass Peter jeden Samstag auf dem Bolzplatz gegen
that Peter-nom every Saturday on the football-pitch against
Ede Fußball spielt
Ede soccer-acc plays
b. dass Peter jeden Samstag *gegen* *Ede* auf dem Bolzplatz *t*
that Peter-nom every Saturday against Ede on the football-pitch
Fußball spielt
soccer-acc plays
"Peter plays soccer against Ede on the football-pitch every Saturday."

(29) a. Auf dem $Bolzplatz_j$ gegen Ede_i spielt Peter
on the football-pitch against Ede plays Peter-nom
jeden Samstag Fußball t_j t_i.
every Saturday soccer-acc
b. ?*Gegen Ede_i auf dem $Bolzplatz_j$ spielt Peter
against Ede on the football-pitch plays Peter-nom
jeden Samstag Fußball t_j t_i.
every Saturday soccer-acc
"Peter plays soccer against Ede on the football-pitch every Saturday."

To conclude, the OPCP is respected in sentences with multiple fronted PPs as well.

2.5 The OPCP and DPs

In Section 2.1, I have already discussed AdvP-DP fronting, which was shown to be possible as long as it respects the OPCD. In this section, I discuss fronting of DP-PP sequences. Firstly, consider double object constructions. Given that the base order in the German VP is IO_{Dat}>DO_{Acc} for the following examples, the order in a V3-sentence in which both objects are fronted has to be retained according to the OPCD and this is what the following examples show (Again, the order DO_{ACC}>IO_{DAT} is possible inside TP.):

(30) a. Dem Politiker$_j$ einen bösen Brief$_i$ schrieben Bürger t_j t_i.
the politican-dat an angry letter-acc wrote citizens-nom
b. *Einen bösen Brief$_i$ dem Politiker$_j$ schrieben Bürger t_j t_i.
an angry letter-acc the politician-dat wrote citizens-nom
"Citizens have written the politician an angry letter."

(31) a. Der eigenen Mannschaft$_j$ das frühe Tor$_i$ wünschten alle
The own team-dat the early goal-acc wished all
Fans t_j t_i.
fans-nom
b. *Das frühe Tor$_i$ der eigenen Mannschaft$_j$ wünschten alle
the early goal-acc the own team-dat wished all
Fans t_j t_i.
fans-nom
"All fans wished their team the early goal."

Secondly, consider an idiomatic expression with a (pronominal) DP followed by a PP such as *sich in Frage stellen* 'to question oneself'. It is impossible to front the non-accented pronoun alone to Spec CP (32), but it is possible to front it together with a PP as shown in (33a) (presumably, because the V3 variant of (32) has an effect on phonological weight of the pronoun itself). However, this is only possible if the base order of the DP-PP elements is retained in the pre-field in accordance with the OPCD as shown in (33b):[5]

5 Another factor is that subjects in V3 sentences are very rarely accepted with other VP-internal material (ib), (ii) (see Winkler 2014), when judged grammatical, however, they need to be indefinite (ia) vs. (ib) and ideally appear with a non-accusative verb (iii), so that it can be agued that they are canonically vP-internal.

(i) a. ??Politiker Fußballern gratulieren gerne nach einem Sieg.
politicians-nom soccer-players-dat congratulate gladly after a victory
b. *Die Politiker Fußballern gratulieren gerne nach einem Sieg.
the politicians-nom soccer-players-dat congratulate gladly after a victory

(ii) *Arbeiter die SPD haben in diesem Bundesland nicht gewählt.
workers the SPD have in this federal-state not voted
"The workers have not voted for the socialist party in this federal state."

(iii) Hans$_j$ in seiner Wut$_i$ lief t_j gegen die Tür t_i.
Hans-nom in his anger run against the door

This restriction, however, concerns only complex pre-fields with exclusively VP-internal elements. As was already shown with example (6), definite subjects may be fronted together with structurally higher material such as sentence adverbs.

(32) ?? Sich_i hat Peter noch nie t_i in Frage gestellt.
Refl has Peter-nom still never in question put
"Peter has questioned himself never before."

(33) a. Sich in Frage hat Peter noch nie gestellt.
Refl in question has Peter-nom still never put
b. *In Frage sich hat Peter-nom noch nie gestellt.
in question Refl has Peter-nom still never put
"Peter has questioned himself never before."

Other cases of V3-sentences with ditransitive verbs are the DP-$CP_{infinitive}$ fronting structures such as (35):[6]

(34) Die Eltern haben [Kindern] nicht erlaubt [auf der
the parents-nom have children-dat not allowed in the
Straße zu spielen].
street to play
"The parents did not allow the children to play in the street."

(35) a. [Kindern] [auf der Straße zu spielen] haben die Eltern
children-dat in the street to play have the parents-nom
nicht erlaubt.
not allowed
b. *[Auf der Straße zu spielen] [Kindern] haben die Eltern
in the street to play children-dat have the parents-nom
nicht erlaubt.
not allowed
"The parents did not allow the children to play in the street."

2.6 Interim summary

We have seen in the preceding sections that V3-sentences involve AdvP-PP, AdvP-AdvP, AdvP-PP, PP-PP, DP-DP, DP-PP and DP-CP sequences. V3-sentences are determined by the OPCD which states that the order in the pre-field (Spec CP) has to be the same as the base-generated order in the middle-field. On the other

6 As already mentioned, comma intonation cannot rescue V3-sentences with OPCD-violating orders of elements that may not be coordinated. This holds, for example, for all the (b)-examples in Section 2.5.

hand, the order of these elements is often variable inside TP. We will next turn to the question as to which analysis is appropriate for the data at hand and consider the analyses already mentioned in (4). In the course of this discussion, I will point out further important properties of V3-sentences.

3 Analyses of V3 in German

Let us start with the analysis of V3 as derived by VP-fronting with an empty verbal head position illustrated in (4b). Firstly, the analysis is appealing from a conceptual point of view. It offers an analysis of V3 that integrates this word order into the more general analysis of V2, i.e. the verb is in the sentence-initial head position (C^0) and one constituent precedes it (the VP with an empty head in Spec CP) as it is characteristic for V2-sentences in German in general. The analysis makes several correct predictions, for example, that the number of elements fronted is in principle arbitrary like the number of elements that may be base-generated in VP is arbitrary. It might also explain that fronting may appear long-distance. The same fronting possibilities exist with VPs that still contain their lexical head, cf. (36) vs. (37) and (38) vs. (39):

(36) Morgen$_j$ nach München$_i$ hat Peter angekündigt [t_j t_i fliegen zu wollen].
tomorrow to Munich has Peter-nom announced to-fly to want
"Peter has announced that he wants to fly to Munich."

(37) [Morgen nach München fliegen zu wollen] hat Peter angekündigt.
tomorrow to Munich to-fly to want has Peter-nom announced
"Peter has announced that he wants to fly to Munich."

(38) a. [$_{CP}$ Dauerhaft$_j$ genügend Studienplätze$_i$ [glaube] ich [wollte der Minister t_j t_i bereitstellen]].
lastingly enough university-places-acc believe I-nom wanted the minister-nom to-provide

b. Sie glaubt [$_{CP}$ dauerhaft$_j$ genügend Studienplätze$_i$ [$_C$ wollte] [$_{TP}$ der Minister t_j t_i bereitstellen]].
she-nom believes lastingly enough university-places-acc wanted the minister-nom to-provide
"She believes that the minister wanted to provide lastingly enough university-places."

(39) a. [$_{CP}$ [$_{VP}$ Dauerhaft genügend Studienplätze bereitstellen]$_i$
lastingly enough university-places-acc to-provide
[glaube] ich [wollte der Minister t_i]].
believe I-nom wanted the minister-nom

b. Ich glaube [$_{CP}$ [$_{VP}$ dauerhaft genügend Studienplätze
I-nom believe lastingly enough university-places-acc
bereitstellen]$_i$ [$_C$ wollte] [$_{TP}$ der Minister t_i]].
to-provide wanted the minister-nom
"I believe that the minister wanted to provide lastingly enough university-places."

In addition, the analysis (4b) might provide the basis for an account of the fact that subjects are difficult as parts of complex pre-fields (cf. footnote 5).

However, some properties of V3-sentences show that the analysis is nevertheless too weak (in not excluding ungrammatical derivations) and too strong (in excluding grammatical derivations) at the same time. Let us consider first scrambling. Given that German has scrambling inside VP and TP the order of DPs, PPs, infinitival CPs (and at least for some AdvP) is relatively free, as pointed out already several times in the preceding sections. Therefore, the analysis in (4b) predicts that scrambling may apply in VP before VP-fronting of the VP with an empty head position takes place. However, we have seen in the preceding sections that this is conflict with the OPCD. Some of the relevant examples are repeated below. Although, the constituent order in the middle-field is free (40)/(42); the order in the pre-field is fixed (41)/(43):

(40) a. dass sich vor zwei Tagen auf dieser Straße ein schwerer
that Refl. before two days on this road a serious
Unfall ereignete
accident occurred

b. dass sich *auf dieser Straße* vor zwei Tagen *t* ein schwerer
that Refl on this road before two days a serious
Unfall ereignete
accident occurred
"A serious accident occurred on this road two days ago."

(41) a. Vor zwei Tagen$_j$ auf dieser Straße$_i$ ereignete sich ein
before two days on this road occurred Refl a
schwerer Unfall t_j t_i.
serious accident-nom

b. ?*Auf dieser Straße vor zwei Tagen ereignete sich ein
on this road before two days occurred Refl a
schwerer Unfall t_j t_i.
serious accident-nom
"A serious accident occurred on this road two days ago."

(42) a. dass Peter jeden Samstag auf dem Bolzplatz gegen
that Peter-nom every Saturday on the football-pitch against
Ede Fußball spielt
Ede soccer-acc plays
b. dass Peter jeden Samstag *gegen* *Ede* auf dem
that Peter-nom every Saturday against Ede on the
Bolzplatz *t* Fußball spielt
football-pitch soccer-acc plays
"Peter plays soccer against Ede on the football-pitch every Saturday."

(43) a. Auf dem Bolzplatz$_j$ gegen Ede$_i$ spielt Peter
on the football-pitch against Ede plays Peter-nom
jeden Samstag Fußball t_j t_i.
every Saturday soccer-acc
b. ?*Gegen Ede$_i$ auf dem Bolzplatz$_j$ spielt Peter
against Ede on the football-pitch plays Peter-nom
jeden Samstag Fußball t_j t_i.
every Saturday soccer-acc
"Peter plays soccer against Ede on the football-pitch every Saturday."

The facts in (40)-(43) come as a surprise under the VP-fronting analysis. Under this analysis, the constituent order restrictions for V3-sentences cannot be derived without additional assumptions such as that scrambling in the middle-field is excluded only in derivations with VPs that are moved subsequently without their head. Note that scrambled orders inside of fronted "full" VPs are perfectly possible, cf. (43b) vs. (43b'):

(43) b.' [$_{VP}$ Gegen Ede auf dem Boltzplatz Fußball gespielt] hat
against Ede on the football-pitch soccer-acc played has
Peter jeden Samstag.
Peter-nom every Saturday
"Peter has played soccer against Ede on the football-pitch every Saturday."

There exist additional asymmetries between VP-fronting and V3 sentences which are difficult to explain under the analysis (4b). For example, multiple pronouns may appear inside of a VP with a lexical head but not in the corresponding V3-sentence, showing again that the analysis (4b) is too liberal[7]:

(44) a. [ihr her-dat ihn him-acc vorgestellt] presented hat has Peter Peter-nom gestern. yesterday
b. *Ihr her-dat ihn him-acc hat has Peter Peter-nom gestern yesterday vorgestellt. presented
"Peter has presented him to her."

Let us next turn to cases in which (4b) is too restrictive. One problem for the VP-topicalization analysis (4b) comes from structurally high adverbs. As was already pointed out in Section 2.1 (see the discussion of examples (6)-(9)), these adverbs are base-generated outside of VP. Adjoined to TP or T', they should not be able to participate in the complex pre-field construction. However, they may also appear in V3-sentences ((45) = (6a)):

(45) Vermutlich$_j$ presumably die defekte Mechanik$_i$ the defective mechanics-nom führte [t_j [$_{TP}$ t_i led zu dem Unfall]]. to the accident

7 It might be argued, however, that (44a) is ruled for independent, i.e. phonologically, reasons. However, a similar contrast shows up with topicalized subjects; cf. (ii), already discussed in footnote 5. They are better with VPs that contain their head.

(i) [$_{VP}$ Arbeiter workers die the SPD SPD gewählt] voted haben have in in diesem this Bundesland federal-state nicht. not
(ii) *Arbeiter workers die the SPD SPD haben have in in diesem this Bundesland federal-state nicht nocht gewählt. voted

Note that in (ii) the plural auxiliary signals already that die SPD cannot be the subjet. However, (ii) might still be difficult for processing reasons because it is difficult to compute the theta-role assigner and the whole phrase structure without case information on the DPs and without a lexical verb closeby. The latter is far away at the end of the sentence in (ii). This might also be the reason for the fact that modal verbs in C^0 have a degrading effect on V3-sentences, as observed in Winkler (2014), cf. (iii):

The same problem arises for the examples with multiple adverb fronting in Section 2.2 in which one high VP-external adverb is involved. These data are difficult to derive within a VP-fronting analysis of V3-sentences.[8]

Another example showing that the VP-fronting analysis is too restrictive is given in (46). Topicalization of nominal predicates with VPs that contain their lexical head is impossible (46a) but the corresponding topicalization in V3 sentences (46b) is fine:

(46) a. *[Vermutlich Unvermögen gewesen] ist der Grund für den Unfall.
presumably inability been is the reason for the accident
b. Vermutlich Unvermögen ist der Grund für den Unfall gewesen.
presumably inability is the reason for the accident been
"The reason for the accident has presumably been inability."

Finally, (4b) is too restrictive because elements that appear in Spec CP in a V3 sentence may c-command into TP; but c-commmand would be excluded by the VP-node. The relevant examples concern weak crossover effects which are absent with short extraction and extraction from restructuring contexts (coherent infinitives) in German. The sentence (47b) derived from (47a) yields a bound variable reading for the possessive pronoun *seinen* "his" inside the indirect object of the matrix verb in (47b). The pronoun is c-commanded by the quantified expression *jeden Verbrecher* "every criminal," the complement of the infinitival verb. The bound variable reading is absent in (47a) because the pronoun is not c-commanded by the quantifier:

(47) a. Der Richter hat [seinen$_{*i}$ Opfern versprochen [jeden
the judge-nom has his victims-dat promised every
Verbrecher$_i$ für die Taten zu verurteilen]]
criminal-acc for the acts to condemn
b. Jeden Verbrecher$_i$ für die Taten$_j$ hat der Richter seinen$_i$
every criminal-acc for the acts has the judge-nom his

(iii) *Arbeiter die SPD wollten in diesem Bundesland nicht wählen.
workers the SPD wanted in this federal-state not to-vote

Therefore, (iv) seems to be slightly better than (ii)-(iii):

(iv) ?? Arbeiter die SPD wählten in diesem Bundesland nicht.
workers the SPD voted in this federal-state not

8 If we assume that, what is fronted is in fact a TP in (4b), then other troublemaking questions arise such as, for example, why complementizer stranding is impossible etc.

Opfern versprochen [t_i t_j zu verurteilen].
victims-dat promised to condemn
"The judge has promised to his victims to condemn every criminal for the acts."

In the case of topicalising the whole infinitive as in (48), the bound reading of the pronoun is also absent due to a failure of c-command of the pronoun by the quantifier:

(48) [Jeden Verbrecher$_i$ für die Taten zu verurteilen] hat der Richter$_j$
every criminal-acc for the acts to condemn has the judge-nom
seinen$_{*i/j}$ Opfern versprochen.
his victims-dat promised

To sum up, the analysis of V3 in (4b) is too strong and too weak. Let us next turn to the analysis in (4a), i.e. the multiple specifier analysis of V3 in German.

In multiple wh-fronting languages such as Bulgarian, the OPCD is respected, as in German V3-sentences. Richards (1999) derives this effect for multiple wh-questions in Bulgarian by assuming that multiple wh-fronting targets multiple Spec's of CP (see also Mulders 1996). He assumes a Linear Crossing Constraint, i.e. the paths of multiple movements must cross rather than nest just in case their destinations are multiple specifiers of a single head (see (4a)). Other variants of a multiple specifier analysis, for example CP-recursion or a featural-specified more articulated left periphery in the sense of Rizzi 1997, could also be adopted for an analysis of V3. In combination with the Linear Crossing Constraint, they all derive the effects of the OPCP. However, one has to admit that a global version of the Linear Crossing Constraint has been argued not to be a *well-formedness* but an *ill-formedness* constraint on movement (see, for example, Baker 1977, Pesetsky 1982, Lasnik and Saito 1992, Tanaka 2003, Sabel 2002) and that multiple movements have to proceed instead via nested paths. The Nested Path Constraint can be derived from the Minimal Link Condition (Chomsky 1995), as argued in Kitahara (1997). If, however, crossed paths are excluded the question of how to derive the OPCD effects remains a mystery under the multiple specifier analysis. A consequence is that under the analysis (4a), we have to give up the idea that German is a strict V2 language with a unitary kind of matrix sentence derivation.

Let us next turn to the empirical arguments against (4a). We have already seen examples showing that extraction from infinitives and from finite clauses is possible in V3 sentences. The examples (36) and (38) are repeated here as (49)-(50):

(49) Morgen$_j$ nach München$_i$ hat Peter angekündigt [t_j t_i fliegen
tomorrow to Munich has Peter-nom announced to-fly

zu wollen].
to want
"Peter has announced that he wants to fly to Munich."

(50) a. [$_{CP}$ Dauerhaft$_j$ genügend Studienplätze$_i$ [glaubt] sie
lastingly enough university-places-acc believes she-nom
[wollte der Minister t_j t_i bereitstellen]].
wanted the minister-nom to-provide
b. Sie glaubt [$_{CP}$ dauerhaft$_j$ genügend Studienplätze$_i$
she-nom believes lastingly enough university-places-acc
[$_C$ wollte] [$_{TP}$ der Minister t_j t_i bereitstellen]].
wanted the minister-nom to-provide
"She believes that the minister wanted to provide lastingly enough university-places."

In the analysis of multiple fronting in Sabel (2001, 2003), I have already pointed out that the multiple specifier analysis predicts that long movement across a short fronted element should be possible. If multiple specifiers were available, we would expect that long movement could proceed via an empty specifier position in the embeded clause. The examples (51a) and (51b) show that long movement across a short moved element is impossible in German. The derivation is impossible independent of whether the higher or lower element has been shortly moved to Spec CP1. A topic island effect arises. Extraction to Spec CP of both elements is only possible in case that they are both short extracted as in (50b) or long extracted as in (50a) (given that extraction obeys the OPCD).

(51) a. *[$_{CP2}$ Dauerhaft$_j$ [$_{C'}$ glaubt sie [$_{CP1}$ genügend Studienplätze$_i$
lastingly believes she-nom enough university-places-acc
[$_{C'}$ wollte der Minister tj ti bereitstellen]]]].
wanted the minister-nom to-provide
b. *[$_{CP2}$ Genügend Studienplätze$_i$ [$_{C'}$ glaubt sie [$_{CP1}$ dauerhaft$_j$
enough university-places-acc believes she-nom lastingly
[$_{C'}$ wollte der Minister t_j t_i bereitstellen]]]].
wanted the minister-nom to-provide

The analysis (4a) cannot rule out the ungrammatical sentences (51) without further language specific assumption. Consider also the following examples, which show that elements from different clauses cannot be mixed in V3 sentences (ungrammaticality results with the inverted and non-inverted order of the extracted elements):

(52) a. *[Gestern$_j$ mit Hans$_i$ [versprach t$_j$ Maria [t$_i$´ dass
yesterday with Hans promised Mary-nom that
sie t$_i$ ins Kino gehen wird]]].
she-nom to-the movies go will
"Mary promised yesterday that she will go to the movies with Hans."

b. *[Morgen$_j$ aus Delhi$_i$ [wird Maria t$_j$ wissen [t$_i$´ dass
tomorrow from Delhi will Mary-nom know that
Hans ihr etwas t$_i$ mitgebracht hat]]].
Hans-nom her something brought-along has
"Mary will know tomorrow that Hans has brought something along for her from Delhi."

The ungrammaticality of the examples in (52) is likewise unexplained under the multiple specifier analysis. In (52), each single movement step targets a local CP specifier position and should therefore be legitimate. However, the ungrammaticality of these sentences shows that multiple specifiers are not available in Geman V3 sentences.

The only case where a mixture of non-clause mates is possible in V3 sentences concerns restructuring (coherent infinitives) in German. The matrix verb *erlauben* "promise" selects for a coherent infinitive in (53) but not the matrix verb überzeugen "convince"[9]:

(53) a. Ihm$_j$ in die USA$_i$ hat Maria t$_j$ [nicht t$_i$ zu fliegen] erlaubt.
him-dat in the USA has Mary-nom not to fly allowed
"Mary has allowed him not to fly to the USA."

b. *Ihn$_j$ in die USA$_i$ hat Maria t$_j$ [nicht t$_i$ zu fliegen] überzeugt.
him-acc in the USA has Mary-nom not to fly convinced
"Mary has convinced him not to fly to the USA."

It remains unclear, however, how we can derive the asymmetry in (53) from the multiple specifier analysis. This asymmetry is typical for scrambling operations with (non-) transparent infinitives in German. I will come back to the parallels between scrambling and the derivation of V3-sentences in the next section.

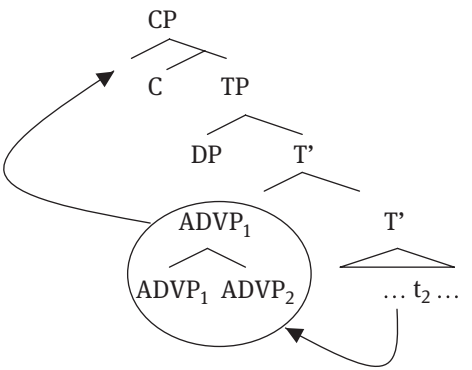
9 Irrelevantly for the present discussion, negation in (53) is ambiguous with this word order and can take matrix or embedded scope. I have indicated with the brackets the embedded scope reading.

4 An alternative analysis of V3 in German

Given the problems associated with the analyses in (4a)-(4b), I assume the analysis (4c), the cluster analysis, that is illustrated below in (55) with a concrete example of multiple adverb fronting as discussed in Section 2.2. I think that (55) is a conceptually and empirically preferable alternative for an explanation of V3-sentences in German ((11) from Section 2.2 is repeated here as (54)).

(54) a. Sicherlich$_j$ gut$_i$ hat Peter t$_j$ die Prüfung t$_i$ bestanden.
certainly well has Peter the exam passed
b. *Gut sicherlich hat Peter die Prüfung bestanden.
well certainly has Peter the exam passed

(55)



In (55), Adv1 is attracted by an attractor-feature in C, Adv1 (the attractee), however, may optionally realize the same type of attracting EPP-feature and become an attractor for Adv2. Then the so-built complex constituent moves to Spec CP. The general idea is expressed as the *Cluster Hypothesis* in (56) (Sabel 1998, 2001, 2003, Grewendorf and Sabel 1999), i.e. the derivation of complex pre-fields in V3-sentences can be seen as an instance of cluster formation, i.e. because of (56).

(56) *Cluster Hypothesis*
A feature F that is attracted by K attracts a feature of the same type F.

Assuming that cluster formation in V3-sentences of German proceeds via adjunction like scrambling, adjunction can apply more than once and we correctly predict that the number of elements fronted is in principle arbitrary as with the VP-fronting analysis (4b).[10] To derive the effects of the OPCD, which was a

10 Following Nunes (1995, 2001 and 2004), Bobaljik and Brown (1997), Matushansky (2006) among others, I adopt the sideward movement approach for adjunction movement.

problem for the (headless) VP-fronting analysis in (4b), I assume a generalized mechanism of leftwards-movement with "right-adjunction."

Note that the observed asymmetries between VP-topicalization without a verbal head and overt VP-topicalization in (44) and (46), and the problem of VP-external adverbs in V3-sentences (45) do not arise for the analysis in (4c) because overt VP-topicalization is a completely different operation from the derivation of V3-sentences as derived by cluster-formation. Given that adjunction may apply to VP-external adjuncts, and given that nominal predicates may be adjoined in accordance with (56), the V3-sentences with high adverbs (45) and nominal predicates (46) can naturally be derived.

Consider next the c-command problem that the headless VP-fronting analysis has to face. In sentences such as (47b), repeated here as (57) a bound variable reading for the possessive pronoun *seinen* "his" inside the matrix DP-object is possible showing that it is c-commanded by the quantified expression *jeden Verbrecher* "every criminal," the complement of the infinitival verb (irrelevantly the infinitive is extraposed in (57)).

(57) Jeden Verbrecher$_i$ für die Taten$_j$ hat der Richter seinen$_i$
every criminal-acc for the acts has the judge-nom his
Opfern versprochen [t$_i$ t$_j$ zu verurteilen].
victims-dat promised to condemn
"The judge has promised to his victims to condemn every criminal for the acts."

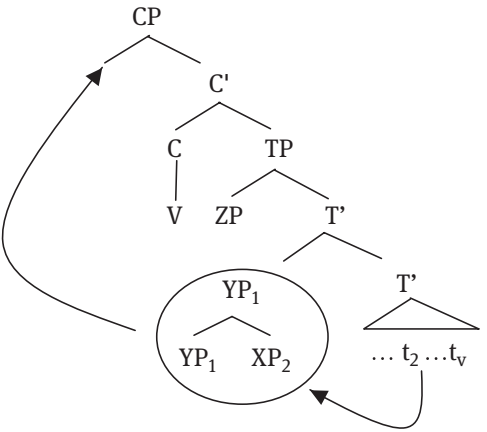
Hence the VP-fronting analysis incorrectly excludes this reading because the VP-node *[$_{VP}$ Jeden Verbrecher$_i$ für die Taten$_j$ ø]* blocks c-command.

A similar problem for the analysis in (4b) is posed by an example that was discussed in Section 2.3. In sentence (19a), repeated here as (58), the adverbial has either scope over the following PP or it scopes over the sentence and hence c-commands out of the pre-field (see also Jacobs 1986, Bayer 1996):

(58) Nicht$_j$ nach Honolulu$_i$ ist Peter t$_j$ t$_i$ geflogen.
not to Honolulu is Peter flown
"Peter has not flown to Honolulu."

Under the cluster analysis of V3, however, it is expected that negation in (58) (YP in the structure below) c-commands out of Spec CP, taking scope over the whole sentence or that it scopes only over the DP in the pre-field (XP in (59)).

(59) *Cluster Analysis*



Let us next compare the cluster analysis in (4c) = (59) with the multiple specifier analysis (4a). In contrast to the multiple specifier analysis, there is only one landing-site in front of the finite verb in C^0 in (59). Only one constituent precedes the verb in V3-sentences and the fact that German is a strict V2-language is retained. Furthermore, the movement operations in V3-sentences do not proceed via crossed paths that is, as I have already mentioned, a welcome result.

Let us next return to the empirical problems that the multiple specifier analysis has to face and ask whether they arise in the cluster analysis as well. We have seen in the preceding section that multiple elements may be together either long or shortly fronted ((50)=(60)). However, the analysis with multiple specifiers does not rule out the ungrammatical sentences (61) where one element is stranded in the intermediate Spec CP and the other is extracted long distance ((51)=(61)) because it is expected that long movement could proceed via a second empty CP specifier position in the embedded clause:

(60) a. [$_{CP}$ Dauerhaft$_j$ genügend Studienplätze$_i$ [glaubt] sie
lastingly enough university-places-acc believes she-nom
[wollte der Minister t_j t_i bereitstellen]].
wanted the minister-nom to-provide

b. Sie glaubt [$_{CP}$ dauerhaft$_j$ genügend Studienplätze$_i$
she-nom believes lastingly enough university-places-acc
[$_C$ wollte] [$_{TP}$ der Minister t_j t_i bereitstellen]].
wanted the minister-nom to-provide
"I believe that the minister wanted to provide lastingly enough university-places."

(61) a. *[$_{CP2}$ Dauerhaft$_j$ [$_{C'}$ glaubt sie [$_{CP1}$ genügend Studienplätze$_i$ [$_{C'}$
lastingly believes she-nom enough university-places-acc
wollte der Minister t_j t_i bereitstellen]]]].
wanted the minister-nom to-provide

b. *[$_{CP2}$ Genügend Studienplätze$_i$ [$_{C'}$ glaubt sie
enough university-places-acc believes she-nom
[$_{CP1}$ dauerhaft$_j$ [$_{C'}$ wollte der Minister t_j t_i bereitstellen]]]].
lastingly wanted the minister-nom to-provide

The impossibility of (61) can be treated in analogy to the impossibility of excorporation with head movement (recall Baker's 1988:73 analysis) assuming that head movement and phrasal movement are not different at the level of syntax (Matushansky 2006). It is impossible to strand a segment of a complex adjunction structure and it is likewise impossible to leave a trace that is dominated by only one segment of the adjunction structure. This restriction rules out (61). The fact that V3-sentences involve adjunction structures provides also the key for explaining that elements from different clauses cannot be mixed in V3 sentences ((52)=(62)). Recall that under the multiple specifier analysis, each single movement step targets a local CP specifier position and the constituent order below should therefore yield a well-formed sentence:

(62) a. *[Gestern$_j$ mit Hans$_i$ [versprach t_j Maria [t_i´ dass
yesterday with Hans promised Mary-nom that
sie t_i ins Kino gehen wird]]].
she-nom to-the movies go will
"Mary promised yesterday that she will go to the movies with Hans."

b. *[Morgen$_j$ aus Delhi$_i$ [wird Maria t_j wissen [t_i´ dass
tomorrow from Delhi will Mary-nom know that
Hans ihr etwas t_i mitgebracht hat]]].
Hans-nom her something brought-along has
"Mary will know tomorrow that Hans has brought something along for her from Delhi."

The ungrammaticality of the examples in (62) is unexplained under the multiple specifier analysis but it follows from the fact that adjunction movement in German V3-sentences like adjunction movement as an instance of German scrambling is local and applies only sentence-internally. (For coherent infinitives whose sentential status is under debate (i.e., Sabel 1996 for a clausal and Fanselow 2001, Haider 2010, Wurmbrand 2001 for a non-clausal analysis) see the discussion below). Therefore, example (62) is exluded.

The ungrammaticality of (61)-(62) shows that multiple specifiers are not used for the derivation of German V3 sentences. The only case where a mixture of non-clause mates is possible in V3 sentences is the restructuring case with coherent infinitives in German, i.e. exactly those contexts in which scrambling out of an infinitive is possible (example (53), is repeated here as (63)):

(63) a. Ihm$_j$ in die USA$_i$ hat Maria t_j [nicht t_i zu fliegen] erlaubt.
him-dat in the USA has Mary-nom not to fly allowed
"Mary has allowed him not to fly to the USA."

b. *Ihn$_j$ in die USA$_i$ hat Maria t_j [nicht t_i zu fliegen]
him-acc in the USA has Mary-nom not to fly
überzeugt.
convinced
"Mary has convinced him not to fly to the USA."

The asymmetry in (63) is typical for scrambling operations and long passives with transparent and opaque infinitives in German but independent of the presence of multiple specifiers. Based on the facts in (63) and the differences between (60) and (61)-(62), I propose (64):

(64) *Locality on Cluster Formation*
Cluster formation is constrained by the same locality conditions as scrambling.

(64) has several implications. Firstly, according to (64), we expect that other scrambling-languages with V2 also allow for cluster formation and V3-sentences. This prediction seems to be borne out, for example, in Kashmiri (see Bhatt 1999, chapter 4). Secondly, scrambling-languages without V2 such as Japanese, Korean and Modern Persian also allow for cluster formation in multiple fronting constructions although we do not find V3-sentences. Cluster movement is an instance of multiple scrambling instead in these languages. Furthermore, given that scrambling may apply long distance out of finite clauses in these languages, it does not obey a "clause-mate" condition as in German (see Saito 1994, Grewendorf and Sabel 1996, Sabel 2001 for relevant facts on Japanese, showing that the prediction is borne out). Finally, in non-scrambling languages such as English and French we would expect that cluster formation is impossible and that multiple fronting, for example, in sentences with multiple topicalizations, is derived without cluster formation and hence, probably by movement to multiple specifier positions.

Having shown that the analysis in (4c) avoids the problems that the VP-topicalization and multiple specifier analyses in (4a)-(4b) have to face, one problem has still to be solved. Consider a derivation with two XPs in their base positions as in (65a) where XP asymmetrically c-commands YP. The correct V3-sentence respects the OPCD. It would give us [XP YP V [... t_{XP} t_{YP}]]. The question arises how we can exlude that YP is scrambled first in front of XP as in (65b) and then attracts XP (XP right-adjoins to YP) as in (65c) and in the next step the whole category moves to Spec CP violating the OPCD as in (65d).

(65) a. [$_{TP}$ ... XP ... YP ... V]
b. [$_{TP}$ ... YP ... XP ... t_{YP} ... V]
c. [$_{TP}$ ... [YP XP] ... t_{XP} ... t_{YP} ... V]
d. *[$_{CP}$ [YP XP] V [$_{TP}$ ... [$t_{YP, XP}$] ... t_{XP} ... t_{YP} ... V]]

In sections 2.2-2.5, I have mentioned this derivation several times and I have pointed out that this derivation is problematic for the headless VP-topicalization approach. As was illustrated, for example, with (9) and (10), repeated here as (67) and (66), a derivation involving movement (scrambling) of the lower base-generated element in front of the higher element, although grammatical (66b), cannot be the input for complex prefield formation (67b); i.e. only (66a) can, cf. example (67a).

(66) a. dass der neue Bildungsminister dauerhaft genügend Studienplätze garantiert
that the new minister-of-education lastingly enough university-places guarantees
b. dass der neue Bildungsminister *genügend Studienplätze* dauerhaft *t* garantiert

(67) a. Dauerhaft$_j$ genügend Studienplätze$_i$ garantiert der neue Bildungsminister t_j t_i.
Lastingly enough university-places guarantees the new minister-of-education
b. *Genügend Studienplätze$_i$ dauerhaft$_j$ garantiert der neue Bildungsminister t_j t_i.

How can we explain that a scrambled constituent order in TP cannot serve as input for cluster formation? There are several ways to answer this question and to exclude this derivation. One possibility is the adoption of the Constraint on adjunction CAM, proposed in Sabel (1996, 2002) which states that adjunction

movement may not proceed via *intermediate* adjunction. Movement of YP in (65c) violates this constraint because the intermediate trace of YP ([$t_{YP,\ XP}$]) is located in an intermediate adjunction position. Another way of excluding this derivation could be provided by a transderivational economy constraint such as the *fewest steps/shortest derivation requirement* which rules out the derivation (65) as an instance of "chain interleaving" (see Collins 1994). The competing derivation (68) in which XP and YP also end up in Spec CP involves a minimized number of operations compared to (65d) and therefore, (65d) is ruled out by economy.

(68) a. [$_{TP}$ ... XP ... YP ... V]
b. [$_{TP}$ ... [XP YP] ... t_{YP} ... V]
c. [$_{CP}$ [XP YP] V [$_{TP}$ ... [$t_{XP,\ YP}$] ... t_{YP} ... V]]

However, the shortest derivation erequirement is a global condition and (for reasons of computational costs) should be avoided and replaced by a local condition such as Last Resort or the Minimal Link Condition (Chomsky 2000). Then, if we assume that a feature needs to be checked as soon as possible in a derivation by the closest potential checker we can exclude the derivation in (65) as well. XP is closer to YP in the representation (65a) than the position higher than XP where YP lands in (65b). Therfore (65b) violates the Minimal Link Condition/Attract and the only possible derivation is (68).

5 Summary

I have tried to show that the specific properties of V3-sentences in German can be derived by the operation of Cluster Formation that has been independently assumed to exist in scrambling languages like Bulgarian, Japanese, Korean, Malagasy etc. (Saito 1994, Sabel 1998, 2001, 2003, Grewendorf and Sabel 1999). It is attested for different movement processes as well such as multiple wh-questions, multiple scrambling, clitic movement etc. In Sabel (2018), it is shown that the Austronesian VOS-language Malagasy obeys essentially the same constraints as German for the formation of complex sentence-initial constituent structures (i.e. the "bodyguard-construction" in the terminology of Keenan (1976)). This shows that the V3-phenomenon is widespread over different language families and independent of the V2-property. The occurrence of V3-sentences in German can be seen as a consequence of the fact that German is a scrambling language. Non-scrambling languages such as English and French do not allow for cluster

formation with XPs. Sentences involving multiple fronting in these languages are therefore differently derived and have completely different properties.

I have shown that the strict linearization patterns (the OPCD) in short as well as in long multiple fronting in German can be derived from constraints on adjunction like uniform right-adjunction, the ban on "excorporation" of XPs out of a cluster in analogy to head adjunction movement. Furthermore, cluster formation was argued to be local in German like scrambling, i.e. it cannot cross sentence boundaries (however, with the exception of coherent infinitives; but this depends depends on how these infinitives are analysed, i.e. either as CPs, TPs or as vPs.) The analysis avoids the problems that alternative analyses of V3 like the (headless) VP-topicalization and the multiple specifier analysis have to face and it offers a treatment of V3-sentences as another case of V2 and not as an additional sentence type in German syntax.

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Sonja Taigel

On the role of the left periphery in the interpretation of causal *Wo*-VE-clauses

Abstract: The paper is concerned with a peripheral type of assertion in German, the *Wo*-verb-end-declarative clause. In passing, namely serving the purpose of offering a comparison, it also looks at declarative verb-first-clauses. An analysis is suggested which accounts for its grammatical and interpretative properties. The characteristics which have to be captured are the clause's postpositioning, the typical occurrence of the modal particle *doch*, its concessive and causal interpretation, its modal causal readings as well as an expressive meaning component. The two factors held mainly responsible for the clause's interpretation in this article are the context and the contribution by *doch*. Verb positioning, on the contrary, does not seem to play an active role in explaining the properties. The suggestion in the literature that the clauses always presuppose their contents will be rejected. Evidence provided in favour of the proposed modelling comes from distributions in corpus data and from a judgement study. Overall, the paper argues that the factors which determine the sentence's readings can be precisely identified and are transparently used. It is not necessary to adopt the view that the *Wo*-VE-clauses is a construction.

1 Introduction

The subject of this article is a peripheral type of assertion in German, the *Wo*-verb-end (VE)-declarative clause. (1) shows an example for such a clause.[1]

(1) It's strange though. For weeks they have been unable to overpower the bear with a tranquiliser gun.

Wo	**er**	**doch**	**angeblich**	**kaum**	**scheu**	**ist**	und	der	geneigte Wanderer
As	*it*	MP	*allegedly*	*hardly*	*shy*	*is*	*and*	*the*	*inclined hiker*

1 All English versions of the corpus examples and examples cited from other pieces of work in this article are translations by S.T.

Sonja Taigel, Bergische Universität Wuppertal

https://doi.org/10.1515/9781501508141-011

von ihm als Appetithappen angesehen wird.
from him as appetiser seen becomes
'Although it is said not to be shy at all, and the inclined hiker is regarded as a tasty morsel by him.'
(BRZ06/JUL.00738 Braunschweiger Zeitung, 03/07/2006)

The sentence of interest starts with the conjunction *Wo* and the finite verb *ist* occurs in final position.[2]

In this example, the *Wo*-clause gets a causal interpretation in the sense of 'because the bear is hardly shy, it is strange that they have been unable to overpower it' and it is also concessive in the sense of 'although the bear is hardly shy, they have been unable to overpower it'.

Apart from this interpretation, *Wo*-clauses can also get different interpretations. In (2), *wo* introduces an adversative clause. It could be substituted by *während* (*while*) or *wohingegen* (*whereas*).

(2) The buses which were built in 2005 and earlier are almost identical in construction compared to the more recent types. However, they have a different identification plate.
Wo **im alten Fahrzeug keine Angaben über die erlaubten**
where in-the old vehicle no details about the allowed
Fahrgastzahlen gemacht werden, steht dort, dass der Bus
ridership made are is-written there that the bus
nur einen Rollstuhlfahrer mitnehmen darf.
only one wheelchair user take can
'Whereas no information is given about the permitted number of passengers in the old vehicle, you can read there that the bus can take only one wheelchair user.'
(RHZ08/FEB.15466 Rhein-Zeitung, 16/02/2008)

There are also causal *Wo*-clauses which do not have the additional concessive reading one can make out for (1).

2 The *Wo*-clauses can occur in different orthographical variants. The two main types are the version with a capital letter after a full stop and with a small letter after a comma. In principle, my account is not restricted to one or the other occurrence. However, due to practical reasons, I limited the corpus queries to those cases in which the spelling is *Wo*. Most of the examples, therefore, start with a capital letter.

(3) Which Hukahodo-brushes are highly recommended and why?
***Wo* ich doch gerade eh investiere.**
Where I MP *now* MP *invest*
'As I'm investing right now anyway.' (DECOW 2014)
(http://beautyjunkies.inbeauty.de/forum/archive/index.php/t-112388.html)

In contrast to (1), the concessive reading is missing in this usage. The speaker only presents a reason why s/he is asking right now.

Finally, *Wo* can also be part of a relative clause (cf. (4)).

(4) What would sport be without its officials and vice versa?
Eine interessante Frage in Zeiten wie diesen.
An interesting question in times like these
***Wo* tagtäglich über neue Highlights aus der Königsklasse**
In which day-to-day about new highlights from the royal league
des Sports [...] berichtet wird.
of sports [...] reported gets
'An interesting question in times like these. In which new highlights from the royal league of sports are reported every single day.'
(BVZ09/SEP.00997 Burgenländische Volkszeitung, 09/09/2009)

The *Wo*-clause can modify the noun phrase *times like these* as in (4) and receive a temporal interpretation. However, the reading can also be local in a relative clause (cf. (5)).[3]

(5) Tearing down such a skyscraper costs a lot of money, takes energy and produces a vast quantity of construction waste.
Und das in einer ökologischen Vorzeigestadt? ***Wo* die Mieten**
And this in an ecological showcase city Where the rents
fast Großstadtniveau erreichen?
almost city level reach
'And this is planned in an ecological showcase city? Where the rents reach almost city level?' (MAR.00412 Die Zeit (online-edition), 22/03/2012)

3 Additionally, there is a use of *wo* in relative clauses which can neither be classified as local nor temporal. In a corpus of spoken data, Pittner (2004: 370–373) also discovers instrumental, final and figurative local interpretations as well as a 'universal' use for which no interpretative relation can be specified.

This paper will focus on the causal *Wo*-clauses, as in (1) and (3).[4] In passing, this clause type will also be compared to another peripheral type of assertion, the verb-first (V1)-declarative clause. (6) shows an example. The relevant sentence starts with the finite verb *trägt* here.

(6) Berlin's testers were very astonished about the fire danger and risk of injury when using the Elta-appliance.
Trägt **der Elta doch wie alle anderen Haartrockner das**
Holds the Elta MP *like all other hairdryers the*
CE-Zeichen und dazu das GS-Zeichen (Geprüfte Sicherheit).
CE-symbol and additionally the GS-symbol approved safety
'As the Elta has the CE-symbol (as all other hairdryers) and in addition the GS-symbol (approved safety).'
(HAZ09/OKT.02744 Hannoversche Allgemeine, 10/19/2009)

The *Wo*-VE-declarative clause and (this type of) the V1-declarative clause are often mentioned together. The paper will also pay attention to their similarities and differences in some places (even though this is not the focus of this article, cf. Müller 2017a on this endeavour).

Both clause types have to be considered peripheral assertions because assertions canonically display verb-second (V2) order in German (cf. 7)).

(7) a. [Angeblich] ist er kaum scheu [...].
Allegedly is it hardly shy
'Allegedly, it is hardly shy.'

b. [Der Elta] trägt das CE-Zeichen.
The Elta has the CE-sign
'The Elta has the CE-sign.'

The aim of this article is to offer an analysis which can account for the grammatical and interpretative properties of *Wo*-clauses. Where applicable and helpful, V1-clauses will be included in the discussion. The next section (Section 2) will discuss certain characteristics which have been attributed to these clauses in the literature. These are the causal and concessive meaning components (2.1), the typicality of the modal particle (mp) *doch* (2.2), the assumption that *doch* is not used transparently in these clause types (2.3) and

4 As far as the categorisation of *wo* is concerned, I assume that it is a subjunction in examples such as (1) to (3) and a relative pronoun in (4) and (5).

the impression of an expressive interpretation (2.4). Section 3 will offer an account on which factors can be made responsible for these characteristics. It will be discussed in how far the context (3.1), verb positioning (3.2) and the mp *doch* (3.3) determine the interpretations. Section 4 shortly summarises the steps of the analysis.

2 The sentences' interpretation

There are a couple of pecularities concerning the *Wo*-clause's interpretation which provide the starting point for every study of this clause type as they have to be captured by an analysis. The aim of this section is to introduce the descriptive assumptions from the literature and decide whether they can be assumed to be correct and, therefore, have to be part of the facts which need to be explained by the account developed in Section 3.

2.1 Causality and concessivity

Concerning the interpretation of *Wo*-clauses, one can often read that a causal and/or a concessive reading is involved (cf. Zifonun et al. 1997: 2312f., Pasch 1999, Günthner 2002). One important point is that those interpretations arise on different levels: The causal interpretation applies on the epistemic or illocutionary level and thus a modal reading applies (in contrast to a propositional interpretation). That means, the sentences never give reasons for issues, but they motivate or justify assumptions, speech acts or attitudes. In (1) e.g., the speaker expresses why it is strange that they have not been able to overpower the bear and in (3) the *Wo*-clause justifies posing the question. The concessive interpretation, however, applies on the propositional level (contra Zifonun et al. 1997: 2312f., Günthner 2002). (1) is concessive in the sense of 'Although the bear is hardly shy, they have been unable to overpower it.'. (8) is an example of a clause which displays concessivity on a modal level of interpretation.[5]

5 The modal reading of causal as well as concessive clauses often co-occurs with V2-order. As all *Wo*-clauses display VE-order, the position of the finite verb cannot be the only factor responsible for this difference in interpretation. However, it has also already been discovered that causal and concessive VE-clauses can have an epistemic or illocutionary interpretation (cf. Antomo & Steinbach 2010: 16ff, Reis 2012: 243ff., Antomo & Steinbach 2013: 446ff., Staratschek 2018).

(8) Ich will diesen Rock kaufen. Obwohl: Er hat ein Loch.
I want this skirt buy although it has a hole
'I want to buy this skirt, although it has a hole.'
(Antomo & Steinbach 2013: 436)

A challenge, restriction or cancellation of the previous utterance is at hand. As the case may be, the speaker might not want to buy the skirt anymore. In (9) – which is an example of a concessive clause on the propositional level – it is clear that the will to buy the skirt is contrary to the expectation that one normally does not buy skirts which have holes (cf. Antomo & Steinbach 2013: 436).

(9) Ich will diesen Rock kaufen, obwohl er ein Loch hat.
I want this skirt buy although it a hole has
'I want to buy this skirt although it has a hole.'
(Antomo & Steinbach 2013: 436)

In (1) the issue that the bear cannot be overpowered with a tranquiliser gun is definitely not questioned. An interpretation along these lines (cf. (10)) is inappropriate because the issue (the bear cannot be overpowered) is presupposed by the speaker. S/he is surprised by it after all.

(10) It's strange though. For weeks they have been unable to overpower the bear with a tranquiliser gun.
#Obwohl: Angeblich ist er kaum scheu [...].
Although allegedly it is hardly shy [...]
'Although, it is said not to be shy at all [...]'

Thus, the concessive reading clearly does not arise on the modal level.

All *Wo*-clauses of the type in (1) and (3) get their causal interpretation on a modal level. Whether additionally a concessive reading (on the propositional level) is involved depends on the type of attitude which the *Wo*-clause provides a motivation/justification for. Attitudes such as being surprised or finding something strange e.g., involve a concessive relation because they arise from an unexpected combination of events. As (3) shows, the concessive reading is missing in case no such attitude is expressed.

In the literature on the topic, the concessive meaning component has only been attributed to the *Wo*-clauses (cf. Zifonun et al. 1997: 2312f., Pasch 1999, Günthner 2002). Önnerfors (1997: 161) explicitly denies that the V1-clauses can have the concessive reading. A question that arises based on these statements is, therefore, whether one has to act on the assumption that one is dealing with

a division of labour between these two clause types. This question will be discussed in Section 3.1 by presenting results of a judgement study. The study also addresses the assumption made in the last paragraph that *Wo*-clauses can have a causal + concessive reading, but that they can also display only the causal interpretation.

2.2 Typicality of *doch*

Another feature of these sentences is that the mp *doch* seems to be very typical for the *Wo*-clauses (cf. e.g. Winkler 1992: 36, Oppenrieder 1989: 203, 2013: 42, Thurmair 1989: 58, 2013: 640). The table in (11) shows the results of an exhaustive corpus search in DeReKo (cf. Müller 2016: 378f., 2017a: 250f.). Among 139 postposed *Wo*-VE-clauses, *doch* occurred in 129 cases.[6]

(11) Postposed causal/concessive *Wo*-VE-clauses in DeReKo (Tagged C)

doch	*schon*	*doch sowieso*	no particle
129	1	2	7

(12) to (14) show the results of a parallel search within causal clauses which are claimed to be functionally similar (cf. Müller 2016: 378, 2017a: 250).

(12) a. *Denn*-clauses in DeReKo (Tagged C) (random sample of 300 sorted)[7]

no MP	MP						
287	12						
	ja	*doch*	*auch*	*wohl*	*ja auch*	*eben*	*einfach*
	4	2	1	1	1	1	2

b. Die Beteiligten sind gut beraten, sich der Diskussion ruhig
The involved persons are well advised self the discussion calm
und besonnen zu stellen. **Denn** es steht viel auf dem Spiel.
and discreet to face as it stands much on the game

6 Comparing the results of a corpus query for *ja-* and *doch*-V1-clauses in DeReKo (exhaustive search in *Tagged C*) shows that the figures are even clearer for the V1-clauses. In only 0.6% of causal *ja-*/*doch*-V1-clauses the particle does not occur (*doch*: 3685 [among them 57 x *doch auch*], ja: 22 [among them 6 x *ja auch*, 2 x *ja eh*, 1 x *ja sowieso*]).

7 The examples were reduced from 284702 hits which the corpus query returned.

'The persons involved are well advised to face the discussion calmly and discreetly. As a lot is at stake.'
(X99/OKT.39219 Oberösterreichische Nachrichten, 13/10/1999)

(13) a. Postposed *da*-clauses in DeReKo (Tagged C) (random sample of 500 sorted)[8]

no MP	MP			
300	9			
	ja	*doch*	*eben*	*sowieso*
	6	1	1	1

b. Plakate werden im Wahlkampf nicht verwendet,
Bills are in-the election campaign not used
da diese zu kostspielig sind.
as they too expensive are
'Bills are not used in the election campaign because they are too expensive.'
(BVZ07/JUL.01845 Burgenländische Volkszeitung, 18/07/2007)

(14) a. *Zumal*-clauses in DeReKo (Tagged C)

no MP	MP					
227	31					
	ja	*doch*	*eben*	*wohl*	*ja auch*	*auch*
	3	1	2	2	1	22

b. Warum finden sich kaum Unternehmen, die für die
Why find self hardly companies which for the
Hauptschule spenden? **Zumal** es in der Schule Ideen
Hauptschule donate The more so as it in the school ideas
gibt, wie die Gelder verwendet werden könnten.
gives how the money used be could
'Why are there hardly any companies that give donations to the Hauptschule? Especially as these schools have a lot of ideas how to use the money.'
(BRZ08/DEZ.05084 Braunschweiger Zeitung, 10/12/2008)

Functional similarity means that modal interpretations have been attributed to these connectors (cf. e.g. Volodina 2010: 320, Blühdorn 2006: 15 on *denn*; Pasch

8 The examples were reduced from 260671 hits which the corpus query returned.

1983: 335, Zifonun et al. 1997: 2303, Pasch et al. 2003: 397 on postposed *da*; Blühdorn & Ravetto 2014: 6, Pasch et al. 2003: 397 on *zumal*). Comparing the distributions in (11) with those in (12) to (14) clearly reveals that they are different. In general, particles seem to be rather infrequent in *Denn*-, (postposed) *da*- and *Zumal*-clauses. Supposedly, these clauses mirror the general rate of the occurrence of mps in assertions. The high portion of *doch* in the *Wo*-clauses, therefore, needs to be considered notable even more.

Against this background, the distribution of data confirms the impression concerning the typical occurrence of *doch*. However, I will not subscribe to the view held by other authors that the explanation for this use of *doch* is due to the contents of the *Wo*-clause being presupposed and the mp coding this status (cf. e.g. Winkler 1992: 43, Pasch 1999: 145, Eroms 2000: 236, Günthner 2002: 315, 324ff., Kwon 2005: 90). This aspect will be pursued further in Section 3.3.1.

2.3 An interpretive puzzle about *doch*

Until now, there has been little effort to motivate the occurrence of *doch* in these clauses. The main reason for that is the view held in the literature that *doch* is not used transparently in this environment. This claim has mainly been made for the V1-clauses. However, as the two clause types can in principle be interpreted identically, the same puzzle arises with respect to the *Wo*-clauses.

When describing *doch* (cf. e.g. Thurmair 1989: 110ff., Meibauer 1994: 108ff., König 1997: 67ff.), it is mostly assumed in one way or another that the particle codes adversativity. The speaker turns on another proposition which can be implicitly derived from the preceding utterance. (15) can be analysed in that way that there is a sort of contradiction between the statement that Patrick is not at home and his car being there because usually if he is not at home, his car is not there either.

(15) B: Patrick is not at home.
A: Aber sein Auto ist **doch** da.
But his car is MP *there*
'But his car is there, though.' (Ormelius-Sandblom 1997: 83)
'If Patrick is not at home, his car is usually not there.'

If one wanted to attribute this meaning to the use of *doch* in (16), one had to assume that one can derive that it was not King Dagobert I who gave a winery to

the cathedral from the information that the wine gave importance to the place. This interpretation is certainly not apt.

(16) Since the early Middle Ages, the wine has lent importance to the place.
War **es doch König Dagobert I., der der Metzer Domkirche**
Was it MP *king Dagobert I who the Metzer Domkirche*
ein Weingut in Neef schenkte.
a winery in Neef gave
'Because it was King Dagobert I who gave a winery in Neef to the cathedral of Metz.'
(RHZ09/OKT.24515 Rhein-Zeitung, 28/10/2009)

The same problem arises for the interpretation of *doch* in (3) (repeated here for convenience in (17)).

(17) Which Hukahodo-brushes are highly recommended and why?
Wo **ich doch gerade eh investiere.**
Where I MP *now* MP *invest*
'As I'm investing right now anyway.' (DECOW 2014)
(http://beautyjunkies.inbeauty.de/forum/archive/index.php/t-112388.html)

It is not appropriate to derive from the speaker's enquiring about the recommended brushes that he will not invest.

Contrary to Jacobs (2015: 55–62) and to Önnerfors (1997: 170), I will not hold the view that *doch* is not used transparently in this sentential environment and that either only a very abstract contribution by the particle can be assumed (Önnerfors) or that the relevant V1- and *Wo*-clauses have to be considered *constructions* (in the narrow sense) (Jacobs). The key ingredient for solving this puzzle (in Section 3.3.3) will be the underlying modelling of the meaning of *doch*. In contrast to most previous accounts, this modelling does not refer to adversativity and, therefore, allows to capture other uses of *doch* which do not seem to have an adversative reading either (such as discourse initial uses and certain directives) (cf. also Müller 2016: 171f., 407ff., 522ff., Müller 2017b: Section 2.1). When looking at *Wo*-clauses of the type in (1) (repeated in (18)), however, it becomes obvious that – even under the standard account of *doch* – the lack of transparency is in fact not as dramatic as has been assumed by the above authors.

(18) It's strange though. For weeks they have been unable to overpower the bear with a tranquiliser gun.

Wo **er** **doch** **angeblich** **kaum** **scheu** **ist** und der geneigte
As *it* MP *allegedly* *hardly* *shy* *is* *and* *the* *inclined*
Wanderer von ihm als Appetithappen angesehen wird.
hiker *from* *him* *as* *appetiser* *seen* *becomes*
'Although it is said not to be shy at all, and the inclined hiker is regarded as a tasty morsel by him.'

(BRZ06/JUL.00738 Braunschweiger Zeitung, 03/07/2006)

In this usage, one might easily argue that the proposition that the bear is shy can be derived from the information that they have not been able to overpower it and that the *Wo*-clause which contains this very proposition with the opposite polarity directly reacts to it. The overemphasis of *doch*'s 'improper' use stems from the fact that the problem has mostly been looked at from the perspective of V1-clauses which display the purely causal reading (i.e. without an additional concessive reading) (which is also the reading at hand in (16)) more frequently. However, as V1-clauses can also be used with the additional concessive interpretation and the two clause types can, therefore, in principle be used identically, there is also a certain amount of V1-clauses for which there is no need to assume that *doch* is not used transparently. Section 3.3.3 will show how its transparency can also be reconstructed for non-concessive occurrences of *Wo*- (and V1-) clauses.

2.4 Expressivity

Wo-clauses (and V1-clauses) have been said to be expressively reinforced (cf. Oppenrieder 1989: 204 about *wo*-VE- and V1-clauses, 2013: 42 about *wo*-VE-clauses, Reis 2000: 218 on V1-clauses). Although this impression has been formulated, it is difficult to find out what the authors precisely mean by that. There is no explanation in which way these sentences are more expressive than others and in which way this is associated with their use.

In newspaper data as well as literary data, there are contexts of use to which expressivity can be attributed without further ado. In the following, I will restrict the presentation to examples from newspapers; literary data is discussed in Müller (2016: 416ff., 2017a: 268ff.).

In DeReKo, *Wo*-clauses mainly occur in texts which are assigned to the feature pages, such as columns e.g. In this sense, 'casual' contexts are at hand. (19) shows a typical example.

(19) My opinion about the wags in the stands, in particular Mrs Beckham? My clever answer is that they are unnatural and have obviously been Botox injected. Ok, this cliff is bypassed. Why I didn't bring an autograph by Lukas Podolski, my daughter interferes. She needs it, I'm thinking.
Wo **sie doch sonst jeden oberpeinlich-uncool**
Where she MP *otherwise everybody most embarrassing-uncool*
findet, der nur das Wort Fußball in den Mund nimmt.
finds who only the word soccer in the mouth takes
'As she usually considers everybody most embarrassing and uncool who only mentions the word soccer.'
(BRZ06/JUL.01343 Braunschweiger Zeitung, 04/07/2006)

A first-person narrator reports on an event and is often outraged. This attitude can also be expressed performatively, as in (20).

(20) Ein Hockey-Trainer im DFB, igitigitt!
A hockey-coach in-the DFB ugh!
'A hockey-coach in the DFB, ugh!'
Wo **dieser Verband doch Koryphäen der Ausbildung**
Where this association MP *experts of-the training*
wie den von Sportdirektor Matthias Sammer, welcher
like the by sporting director Matthias Sammer who
statt Peters das Rennen machte, **aus dem Ruhestand**
instead-of Peters the race made from the retirement
reaktivierten Erich Rutemöller vorzuweisen hat.
reactivated Erich Rutemöller show has
'As this association has experts of coaching such as Erich Rutemöller who got reactivated from his retirement by sporting director Matthias Sammer and who won the race instead of Peters.'
(M06/SEP.76347 Mannheimer Morgen, 29/09/2006)

In some examples, punctuation marks additionally suggest an expressive intonation (cf. (21)).

(21) His bad luck: At the same time his son together with his bride were ballooning to the west and his father innocently procured the material. Now he is an escape agent, celebrated in the west, damned in the east.

Wo	**er**	**doch**	**so**	**gern**	**zurück**	**zu**	**seiner**	**Braut**	**will!**
Where	*he*	MP	*so*	*gladly*	*back*	*to*	*his*	*bride*	*wants*

'As he would like to go back to his bride that much!'

(M07/OKT.00333 Mannheimer Morgen, 02/10/2007)

If the attitudes which are motivated by the *Wo*-clauses are not performative, expressions occur which belong to the classes of *exclamative* (d'Avis 2001: 39f.) (e.g. *being surprised*, *finding something strange*) or *emotive-factive* (Kiparsky & Kiparsky 1970: 363) (e.g. *being pleased/sad/annoyed*) *predicates*. The *Wo*-clause is emotionally laden because the proposition is evaluated subjectively. Exclamative clauses display expressivity because something unexpected or something which deviates from the norm is experienced. As it is exactly these attitudes which are involved in the concessive *Wo*-cases, the respective predicates occur.

In other cases, the reader is addressed directly and as typically rhetorical questions occur, s/he is additionally addressed provocatively. (22) is a typical example.

(22) Let's not be mundane, let's say I was still in the mood for music. Why should I go to a concert, if I have such nice CDs at home. Consequently, the day ends the way it started. Binary. Binary? Do you know what that means? No?

Wo	**doch**	**heute**	**alles**	**binär**	**ist.**
Where	MP	*today*	*everything*	*binary*	*is*

'As everything is binary today, though.'

(A98/APR.22936 St. Galler Tagblatt, 11/04/1998)

The attitudes which precede the *Wo*-clauses are thus clearly emotionally laden. Against this background, it seems unnatural that a rational, neutral or indifferent motivation follows. Section 3.3.3 will provide an explanation why *doch* is particularly suited to support the reading of involvement and an affective atmosphere from the perspective of the speaker and the addressee.

3 Deriving the interpretation

Wo is not the only element whose interpretation varies depending on its (sentential) context. When intending to offer an account which allows deriving the respective interpretations, the key question is how abstract or concrete the modelling has to be. This problem has been known at least since Posner (1979a/b) under the heading *semantic minimalism vs. semantic maximalism*. In his works,

he discusses how rich the meaning of *and* has to be considered. (Does it only have an additive interpretation or do also a temporal (cf. (23a)) and a causal *and* (cf. (23b)) have to be differentiated?)

(23) a. Melanie married and got a child.
b. Paul hit Peter and Peter fell.

Apart from conjunctions (which are often ambiguous in this sense), the same question has been posed for modal verbs, affixes or mps. Dahl (1985: 132ff.) e.g. suggested that one has to differentiate between *ja*$_1$ and *ja*$_2$ in order to account for a use of *ja* under which it refers to known information in statements and another use under which it is interpreted as expressing surprise. Similarly, Borst (1985: 43ff.) argues that *doch*$_1$, *doch*$_2$ and *doch*'$_2$ have to be distinguished. Assuming that the relevant linguistic entities are polysemous and present different lexemes in this sense is an easy solution in order to capture the different readings/uses descriptively. However, it does not have any explanatory power. Depending on how many different interpretations can be made out, this would lead to an absurd number of homophone lexemes if applicable. In Volmert (1991), the author lists 44 different *doch*s in fact. It seems highly implausible to assume that there are 44 lexical entries of this type. In the case of *wo*, one already had to assume four lexemes based on the occurrences listed in Section 1. If one found further readings differing in some aspect from the ones already assumed, the cases would multiply even more. In opposition to enriching the lexicon, I will pursue an approach which builds on the view that the lexical entry of *wo* is highly underspecified and gets enriched in the sentential context. The last point is decisive because I do not think that only a sort of pragmatic enrichment can do the job of restricting the very abstract contribution which *wo* makes on its own. Linguistic material which co-occurs determines which precise meaning of the clause introduced by the conjunction is intended. Therefore, the task is to find out which material accounts for which interpretative feature and how they interact. Under the assumption of a polysemous *wo* one would fade out the fact that other linguistic material noticeably co-occurs with the causal, respectively causal + concessive, interpretation of the *Wo*-clauses and that they are always postposed. Or rather these would only be side effects of the respective *wo* (that is *wo*$_1$, *wo*$_2$, *wo*$_3$, *wo*$_4$). I think one should put more weight into the consideration concerning the interaction of means.

Therefore, in the following, I will substantiate that the interpretation of a *wo*-clause can be derived from an interaction of the context (cf. Section 3.1) and the meaning of *doch* (cf. Section 3.3). The underspecified lexical meaning of *wo* needs to be supported by additional linguistic material. I will also discuss the role

of verb positioning (in Section 3.2). However, my conclusion will be that it does not play a special role in building up the interpretation.

3.1 The importance of the context

As mentioned in Section 2.1, it has been claimed in the literature that one has to assume a sort of division of labour between *Wo*-VE- and V1-clauses in the sense that the *Wo*-clauses have been associated with a concessive interpretation, whereas a causal reading has been ascribed to the V1-clauses. If this was true, one could claim that the two clause types could clearly be associated with the one or the other meaning.

In the following, a judgement study will be described which primarily aimed at finding out whether the concessive vs. concessive + causal interpretation really differentiates V1- and *Wo*-VE-clauses (Does the clause type [*Wo*-VE vs. V1] interact with the interpretation [concessive vs. non-concessive]?). As each sentence type has to be tested in both readings, a byproduct of the answer to this question will be how the two interpretations are distributed among the two sentence types.

30 native speakers of German (who were students of German literature and linguistics at the University of Wuppertal in the summer term 2016)[9] judged sentences on a 7-point-scale, with 7 being the highest judgement possible. Each testant saw four different sentences of each of the four conditions (cf. (24)).

(24) Conditions in the experiment

items per testant	***Wo*-VE**	**V1**
non-concessive	4	4
concessive	4	4

Per test, there were 16 test items and 32 filler items. The filler items covered various phenomena (from the areas of word order, subordinate clauses, distribution of correlates, extraction constructions, sentence mood, inflection) and it can be assumed that they also covered various ranges of acceptability. All test items were supposed to look like extracts from regional newspapers. The reason for this presentational design is that this is the type of genre where one finds both clause types in corpora.

(25) and (26) show two example items for each interpretation.

9 Even though they were students of German literature and linguistics, they were perfectly naive about the phenomenon at issue.

(25) non-concessive
Aachen Mayor on a big journey
When the delegation arrived from Beijing after 11 hours on the plane, the mayor cancelled the press conference which had been planned for the evening at short notice.
Und das ist verständlich. Ist er doch sehr erschöpft./Wo er doch sehr erschöpft ist.
And this is understandable. Is he MP *very exhausted*/*Where he* MP *very exhausted is*
'And this is understandable. As he is very exhausted.'
(extract from *Aachener Nachrichten*, 08/07/2015)

(26) concessive
Consultation hour
Appointments with the orthopaedic specialist are usually difficult to get.
Different with Dr. Ingenhorst. Appointments are available at short notice here.
Und das ist erstaunlich. Ist er doch sehr beliebt./Wo er doch sehr beliebt ist.
And this is striking Is he MP very popular/*Where he* MP *very popular is*
'And this is striking. As he is very popular.'
(extract from *Pinneberger Tageblatt*, 20/02/2015)

All test sentences give a reason for an attitude in the preceding sentence. The concessive vs. non-concessive reading was regulated via the respective attitude, e.g. finding something understandable does not involve a concessive reading, but finding something striking does because one is expecting the opposite.

The table in (27) shows the arithmetic means for all conditions across all 30 testants of the study.

(27) Results: arithmetic means

30 testants	**non-concessive**	**concessive**
V1	4.94	4.95
***Wo*-VE**	5.18	5.44

A repeated measures anova procedure calculated by subjects and by items shows that there was no effect for "sentence type" ($F_1(1,29) = 1.87$, $p = 0.182$; $F_2(1,14) = 0.80$, $p = 0.387$) and the interaction of "sentence type" and "interpretation" ($F_1(1,29) = 0.06$, $p = 0.813$; $F_2(1,14) = 0.80$, $p = 0.387$). Only the factor "interpretation" showed a significant effect in the analysis by items ($F_1(1,29) = 1.49$, $p = 0.231$; $F_2(1,14) = 4.83$, $p < 0.05$, $\eta_p^2 = 0.26$).

The important finding for someone who wanted to uphold a principle difference in interpretation of the two clause types would be a significant effect for the interaction of the factors "interpretation" and "sentence type". However, the judgement study does not provide evidence for such an interaction. The results rather suggest that all readings (concessive + causal, only causal) are available for both sentence types and that it is the preceding attitude which decides which reading applies. In this sense, one cannot attribute different use potentials to the two types of clauses, but the linguistic context turns out to be crucial in determining the appropriate interpretation.[10] As the two clause types in most cases follow the attitude (or more generally the speech act) they intend to motivate, this factor influencing their interpretation is always fulfilled.[11]

3.2 The role of verb positioning

In Section 2.1, it was explicated that the *Wo*-VE-clauses receive their causal interpretation on the epistemic or illocutionary level. These are readings of causal clauses which are associated with V2-order in the literature. *Denn*, which requires V2-order, can only display a modal causal reading. In case one observes variance (as applies to *weil*-clauses) between V2- and VE-order, the V2-structure usually codes a modal interpretation. E.g. (28) shows that in contexts in which a propositional interpretation is not appropriate, only the *weil*-V2-construction is acceptable.

(28) a. Es hat geschneit, weil die Straße ist ganz weiß.
It has snowed because the street is completely white
'It has snowed, because the street is completely white.'

b. #Es hat deswegen geschneit, (/) weil die Straße ganz weiß ist.
'#It has snowed for that reason that the street is completely white.'
(Antomo & Steinbach 2010: 17)

The modal interpretations of causal clauses are also often associated with assertiveness or related concepts, more abstractly an illocutionary potential, which

10 However, an analysis of their frequency of use in Section 3.3.3 will show that they in fact do not occur likewise. Furthermore, the clause types differ from each other in the way that V1-clauses hardly occur in speech or in dialogical language (even though this use is not completely ruled out either), but are restricted to written language (cf. Önnerfors 1997: 157, Müller 2016: 375f., 2017a: 248).

11 On preposed *Wo*-clauses see Section 4.

is commonly ascribed to the positioning of the verb. In general (i.e. not only in subordinate clauses), V2-order or fronting of the finite verb to C is associated with illocution (cf. e.g. Wechsler 1991, Gärtner 2002, Brandner 2004, Truckenbrodt 2006, Lohnstein to appear), even though it is not only this exact term which is used (alternative concepts used by these authors which I consider near synonyms are *discourse anchoring*, *force marking*, *features which determine illocutions*, *proto-assertion*). The V2-embeddings are often referred to for comparing VE- and V2-orders in order to provide evidence that there is an interpretive difference between the two structures. Many authors (e.g. Keller 1993, Küper 1993, Uhmann 1998, Holler 2009, Antomo & Steinbach 2010, Volodina 2011) have argued that only those *weil*-clauses can display V2 which have assertive illocutionary force.

For Oppenrieder (1989: 203ff.), *Wo*-VE-clauses are among independent VE-clauses and one is dealing with an assertive type in this case. He builds on Altmann (1987: 49) who assumes that speakers express an attitude with independent VE-clauses which is more special than the basic illocutionary type. Undoubtedly, this applies to *Wo*-clauses as they are assertive, but they can only be used to express a causal relation.

However, verb positioning clearly cannot be decisive for the independent illocutionary status of these sentences as they are interpreted like the *weil*-V2-clauses. Their illocutionary independence cannot be due to the position of the verb.

I trace the independent status of *Wo*-clauses back to their desintegrated intonation. They are never prosodically integrated in a host clause. They are always preceded by a performatively or propositionally coded attitude which is motivated or justified with the following utterance. Antomo & Steinbach (2010: 17) show that prosodic desintegration is also an option for *weil*-VE-clauses. Whereas (28b) is unacceptable, (29) is fine.[12] Desintegrated *weil*-VE-clauses are also discussed in Reis (2013) and Staratschek (2018).

(29) Es hat geSCHNEIT, (\) ***weil* die STRAße ganz weiß *ist***.
(Antomo & Steinbach 2010: 17)

Verb positioning has also been associated with other aspects of meaning, namely foregrounding and backgrounding of information. In a diachronic study, Fleischmann (1973: 90ff.) argues that VE-clauses express background information

12 Examples of this kind (VE-clauses with a modal interpretation) are a challenge for most accounts which aim at associating V2-order (or fronting of the finite verb) with interpretive effects. Usually accounts explain the readings which arise in case a V2-clause occurs. However, they normally cannot (and possibly should not) exclude the possibility that a VE-clause receives the same interpretation.

whereas V2-clauses express foreground information. In the sense of displaying modal causal readings, *Wo*-clauses can be classified as subsidiary in an illocutionary sense. They serve the purpose of ensuring success of another illocutionary type or of justifying an attitude (cf. Motsch 1987: 58, Brandt & Rosengren 1992: 21, Pittner 2007: 54, 2011: 178 on this concept). In this sense, utterances of this type can be considered backgrounded as the focus lies on conveying the utterance for which the *Wo*-clause provides a motivation/justification and it does not lie on the *Wo*-clauses themselves.

From Fleischmann's assumption one should not deduce that the VE-clauses always contain old information. Hartmann (1984: 305f., 311), however, relates backgrounded/additional information to a presupposed status/old information and associates foregrounded/main information with an assertive status/new information. He also argues that the distinction main vs. subordinate clause correlates with these two information states (1984: 312f.). Holler (2009) argues against this assignment referring especially to continuing relative clauses as these VE-clauses contribute new foregrounded information which is relevant for the events reported on.

Truckenbrodt (2013), however, generally associates independent VE-clauses with the meaning components of presupposition and anaphoricity. *Wo*-clauses are not part of his inventory, though. He demonstrates that independent VE-clauses are used as repetitions under their primary usage. An order coded by a *dass*-VE-clause e.g. can never be the first order in a discourse situation (2013: 238). In this sense, they are anaphoric. Exclamative clauses always presuppose their contents. However, *Wo*-clauses neither presuppose their contents (even though authors have argued for that [cf. Section 3.3.1]) nor can one assume that the motivations/justifications get repeated. This does not seem to be sensible as reasons are presented for holding certain attitudes. If it was about repeating these reasons, the same attitudes had to be motivated before in the discourse or the same motivation had to serve the purpose of justifying another attitude. Both scenarios seem highly implausible. In this sense, anaphoricity which Truckenbrodt (2013) sees as the characteristic property of independent VE-clauses cannot be established for the *Wo*-VE-clauses. Therefore, I also do not assume that verb positioning affects the interpretation of a *Wo*-clause as far as its information status is concerned.

3.3 The role of *doch*

According to some authors (cf. e.g. Abraham 1995, Zimmermann 2004, 2008, Coniglio 2011), mps whose syntactic position is (apart from some exceptions) strictly restricted to the middle field covertly move to some left-peripheral position

on the level of *Logical Form* from which they can take wide scope. The accounts differ with respect to which precise position in the phrase structure mps are said to occupy. However, in the sense that mps appear at the very left of a clause on this abstract non-surface level, they can be counted as left-peripheral elements.

The following subsections will discuss the role *doch* plays in causal *Wo*-clauses. It will be argued that *doch* does not code the clause's presupposition (Section 3.3.1). However, it will be claimed to indirectly contribute to the causal reading (Section 3.3.2). Furthermore, it will turn out that the modelling of the mp suggested allows to assume a transparent use of *doch* in the *Wo*-clauses (Section 3.3.3).

3.3.1 Does *doch* code the clause's presupposition?

For *Wo*-clauses, it has been assumed that they presuppose their contents and that *doch* occurs in order to code this meaning (cf. Winkler 1992: 43, Pasch 1999: 145, Eroms 2000: 236, Günthner 2002: 315, 324ff., Kwon 2005: 90). In the following, I will present two arguments against this view and refer to one further important aspect in this argumentation in footnote 13 (for further arguments cf. Müller 2016: 381ff., 2017a: 252ff.).

By referring to the dialogue in (30), Günthner (2002) argues that *Wo*-clauses always contribute background information.

(30) Renovation (Lake Constance)

43Dora:	mhm.	des	geht	ECHT	langsam. (–)		
	mm-hmm	*this*	*goes*	*really*	*slowly*		
	'Mm-hmm this work is coming on really slowly.'						
44	**obwohl**	**wir**	**VIE:L**	**zeit**	**rein[stecken.]**		
	although	*we*	*much*	*time*	*invest*		
	'Although we are investing so much time.'						
45Ute:				[(	)]		
46Dora:	JE.DES.	WOCHENENDE		machen	wir	dran	rum!
	every	*weekend*		*make*	*we*	*at-it*	*around*
	'We potter about it every weekend!'						(Günthner 2002: 331)

The author assumes that *Wo*-clauses can in principle be substituted by *obwohl*-clauses, but that the reverse substitution is not possible. Consequently, according to Günthner additional restrictions apply to *Wo*-clauses, namely in case their contents is new information. (30) is an example for which she argues that it is not possible to include a *Wo*-clause instead of an *obwohl*-clause. The reason is that the *obwohl*-clause cannot provide background information. First of all, I do

not think that a *Wo*-clause is ruled out in this context. If one has this impression, it is not due to the *Wo*-clause having to code new information here, but it can be ascribed to the fact that the modal reading of the causal clause is not easily available. If one interprets the first clause in the way that the person is annoyed or surprised by the slowness and that the *Wo*-clause motivates this attitude ('I am annoyed/surprised that this work is coming on so slowly because we are pottering about it every weekend.'), the *Wo*-clause is perfectly acceptable.

To my mind, the fact that structures of the type in (31) and (32) constitute a typical pattern in the data serves as another argument against the view that a *Wo*-clause always refers to known information.

(31) That was very mean now.
Wo **doch jeder** **<u>weiß</u>**, daß das gar nicht zu schaffen ist!
Where MP *everybody knows that this at all not to manage is*
'As everybody knows that it is impossible to manage.' (DECOW14AX)
(http://www.comicforum.de/archive/index.php/t-88976.html)

(32) Not an easy topic: Paranoia is figment of the imagination; and, therefore, it is particularly difficult for the author to keep the reader interested.
Wo **der doch weiß**, dass die Dinge, die geschehen,
Where he MP *knows that the things which happen*
lediglich einen innerpsychischen Wahrheitswert für die
merely an intraphysical logical value for the
Betroffenen haben.
persons concerned have
'As he knows that the things which are happening only have an intraphysical logical value for the persons concerned.'
(NUN08/JUL.00391 Nürnberger Nachrichten, 04/07/2008)

These structures account for 15% of 635 *Wo-doch*-hits in DECOW2014AX (93 x a form of *wissen* (*know*) + subordinate clause, 63 of which are introduced by *jeder weiß* (*everybody knows*)). In a random sample of 500 sentences with finite lexical verbs six examples containing *wissen* occur in DECOW2014AX. Consequently, it cannot be assumed that the high frequency of examples containing *wissen* is due to the general high frequency of this verb.

If we are dealing with a pattern here, I also consider it difficult for this subcase of the use of *Wo*-clauses to derive that *doch* marks background or knowledge. The sentences themselves carry exactly the meaning which the mp is claimed to contribute after all. There are other examples of mp-characterisations which have been advanced in this way (for criticism cf. Ickler 1994: 380) (cf. (33), (34)).

(33) Sie wissen **ja**, daß er nächste Woche operiert wird.
You know MP *that he next week operated will-be*
'As you know he will have an operation next week.'
ja: Bekanntheit des Sachverhalts für den Hörer
knowledge of the issue for the hearer
'The issue is known to the hearer.'

(34) Da kann man **halt** nichts machen.
There can you MP *nothing make*
'You cannot do anything.'
halt: Einsicht des Sprechers in die Unabänderlichkeit des
realisation by-the speaker in the irreversibility of the
geäußerten Sachverhalts
uttered issue
'The speaker realises that the issue uttered is irreversible.'
(Ickler 1994: 380)

In my opinion, wanting to motivate the meaning of the particle based on such examples can at least be considered inapt.[13]

13 Apart from the fact that it is difficult to adhere to the view that *Wo*-clauses always refer to presupposed information, the other part of the argument does not seem to apply either. One would have to assume that *doch* always refers to known information. Even though many authors hold this view (cf. e.g. Thurmair 1989: 111, Ormelius-Sandblom 1997: 83, Döring 2016: 51, Gutzmann 2017: 151), this is not the only assumption on the market. The accounts by Lindner (1991: 190), Meibauer (1994: 112), König (1997: 69), Diewald & Fischer (1998: 92) and Müller (2014: 185), (2016: 168) do without attributing this meaning component to the particle itself (albeit, of course, *doch*-utterances can refer to known information).

Empirical studies reported on in Döring (2014, 2016) and Döring & Repp (to appear) do not provide evidence for the fact that *doch* is associated with known information. In one study, Döring (2014) analyses the correlation of certain discourse relations and mps. An interesting result of her study concerning the discussion about *doch* (and the question whether it refers to known information or not) is that she does not find evidence for an association of *doch* with BACKGROUND in corpus data (cf. Döring 2014: 86ff.). Additionally, the results of a judgement study provide further evidence for the lacking connection between *doch* and known information: Speakers had the choice between *ja* and *doch* in a BACKGROUND- and JUSTIFY-context. In the BACKGROUND-context, *doch* was chosen less often than expected (cf. Döring 2014: 90ff.). For a more detailed presentation and discussion of her results cf. Müller (2016: 383ff.).

3.3.2 *Doch*'s (indirect) contribution to the causal reading

There are authors who tie the causal interpretation directly to *doch* (cf. e.g. König & Stark & Requardt 1990: 59 and *grammis 2.0*).[14] Önnerfors (1997: 168) and Pittner (2011: 170) in contrast hold the view that *doch* is not causal per se. Interestingly, this question has only been discussed with respect to V1-clauses. This is certainly due to the particle occurring obligatorily in this sentential domain (see footnote 6). Even though the occurrence of *doch* is not necessary in *Wo*-VE-clauses, the distributions in Section 2.2 show that it is still very typical. Strangely, to my knowledge one has never asked for the *Wo*-clauses whether *doch* has more to do with causality. The distributions of the particle in the various causal clauses clearly indicate that *doch* cannot be related to causality in the narrow sense. If there was a direct connection, *doch* should be found roughly the same number of times in causal clauses. This should be true especially for those causal clauses which are interpreted in a similar way as the *Wo*-VE-clauses, namely the modal causal clauses with an epistemic/illocutionary meaning. However, the corpus data rather suggest that the typical causal clause does not have a particle at all and in case a particle does occur, *doch* does not come up strikingly frequently.

Another argument against directly associating *doch* with causality derives from the corpus study referred to in footnote 13 by Döhring (2014) (cf. also Döring 2016) on the interaction of mps and discourse relations. She does not find out that *doch* interacts with the relation *CAUSE*. The number of *doch*-utterances serving this function approximately corresponds to the frequency with which the relation occurs at all (cf. 2014: 88). She identifies a weak effect for *ja*. If the causal reading had to be directly ascribed to the particle, the preferred occurrence of *ja* would still be more likely (as with the alleged presupposition).

Of course, sentences can be related to each other causally in case no *doch* occurs (cf. Önnerfors 1997: 168, Pittner 2011: 171). The second sentence in (35) can be interpreted as motivating the first one regardless of the fact whether *doch* is used or not.

(35) a. Hans kommt nicht. Er ist krank.
Hans comes not He is ill
'Hans does not come. He is ill.'

b. Hans kommt nicht. Er ist **doch** krank. (Önnerfors 1997: 168)

14 http://hypermedia.ids-mannheim.de/call/public/gramwb.ansicht?v_app=g&v_kat=Konnektor&v_id=2058

Speakers tend to establish coherence relations even if no cohesion marker is present. Basic interpretation patterns play a role here (e.g. Linke & Nussbaumer & Portmann 2001: 228f., Averintseva-Klisch 2013: 26ff. who builds on Hume 1955 [1748], cf. also Sanders & Spooren & Noordmann 1992: 6, Fabricius-Hansen 2000: 339f.). The basic pattern is:

(36) coordinate < temporal < causal

The relations are tighter from left to right and a relation to the left is also always a precondition for a relation on the right. In addition, it has been assumed that speakers choose the tightest relation if possible (which is the causal relation) (cf. Breindl & Waßner 2006: 58, Fn 7, 61f.).

The *Wo*-clauses can be read causally if *doch* does not occur (as in (37)), even if this strategy occurs in corpus data very infrequently.

(37) "Why does an Amish man have speaker cables?" I'm thinking loudly.
"*Wo* er weder Radio noch Fernseher besitzt.
As he neither radio nor TV owns
'As he neither owns a radio nor a TV.'
He does not even use a milking machine or a generator for milk processing."
(Castillo 2011: 53)

Among the postposed *Wo-doch*-clauses in my corpus data, there is none which does not get a causal reading. However, this constellation is not impossible. That means that *Wo*-clauses can also contain the *doch* and be interpreted as a relative clause (cf. (38)), e.g.

(38) What would sport be without its officials – and vice versa?
Eine interessante Frage **in Zeiten wie diesen**. ***Wo*** **doch**
An interesting question in times like these As MP
tagtäglich über neue Highlights aus der „Königsklasse
day-to-day about new highlights from the "royal league
des Sports" [...] berichtet wird.
of sports" [...] *reported gets*
'An interesting question in times like these. In which new highlights from the royal league of sports are reported every single day.'
(BVZ09/SEP.00997 Burgenländische Volkszeitung, 09/09/2009)

However, if *doch* is missing, one is more willing not to interpret the clause as a causal clause. In this sense, *doch* disambiguates the interpretation in *Wo*-clauses.

Therefore, I claim that it is important for the *Wo*-clauses that the issues/assumptions which get causally related principally allow this causal relation (cf. also Gohl 2000: 85ff. on the relevance of situational and conceptual knowledge in the interpretation of asyndetic structures). If this is the case and *doch* occurs, one normally interprets the clauses causally.

I claim that *doch* is indirectly responsible for establishing the causal link between the utterance in which it occurs and the previous utterance as explained in the following.[15] I build on the view that a *Wo*-clause is underspecified. It has the problem of being principally ambiguous because the conjunction can have various interpretations: a temporal, adversative, local or causal one. In this sense, its semantics is rather poor. One might assume that its lexical meaning is something like *sameness*. Textual connection is difficult because the prefield and the left sentence bracket (which are the positions responsible for textual connection) are not available. The comments above have already shown that the sentences can in principle be related causally to each other. This tight context connection can now be forced by *doch*. In Müller (2014: 185ff., 2016: 168ff.), against the background of other data, the contribution of *doch* is modelled in the way that it indicates that the utterance reacts to an open issue. The proposition contained in a *doch*-utterance is part of the topic which is under discussion in the conversation. (39) sketches this interpretation of *doch*'s contribution within a model which contains a speaker's beliefs, a hearer's beliefs, consciously shared beliefs and a table which saves the open topics, which means what is under discussion in the conversation at the current stage.[16] Müller assumes that making a *doch*-utterance presupposes that the topic is under discussion.

(39) context before a *doch*-assertion

DC_A (≈ speaker)	table	DC_B (≈ hearer)
	$p \vee \neg p$	
common ground		

In (40) e.g., the standard approach (cf. e.g. Thurmair 1989: 110ff., Meibauer 1994: 108ff., König 1997: 67ff.) would say that ¬q suggests ¬p and that A reacts with p to ¬p.

15 This principle idea is also made in Önnerfors (1997: 170) and Pittner (2011: 170). For a discussion of their account cf. Müller (2016: 402ff.). I think my account captures in a more precise way why it is exactly the particle *doch* that promotes the causal reading.

16 For a more precise presentation of this modelling the reader be referred to the original pieces of work cited in the text.

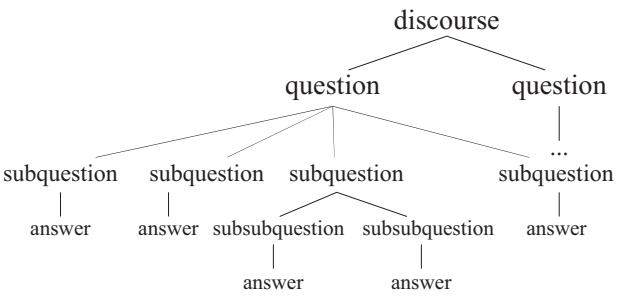
(40) B: Patrick is not at home (= ¬q).
A: Aber sein Auto ist doch da (= p).
¬q > ¬p
'If Patrick is not at home, his car usually is not there.'
(Ormelius-Sandblom 1997: 83)

Saying the topic has to be under discussion captures those cases as it can be open because someone else committed herself/himself to the opposite. However, it is less restrictive and allows cases which are not adversative (cf. also Diewald & Fischer 1998: 92).

Reacting to an open topic can then be thought of as being equal to referring to or establishing a tight context connection. An idea which is part of discourse models (cf. e.g. Roberts 1996, Büring 2003) is that discourse ideally unfolds in question-answer-sequences, the 'questions' being also opened up by assertions. In reality, discourse is usually not structured by strict question-(complete) answer-sequences, but partial answers are given. This is why discourse models also assume that a discourse can be split up in subquestions. Crucially, these subquestions form question-answers-pairs with their answers as well (cf. (41) and (42), Büring 2003: 515f.).

(41) How was the concert?
Was the sound good? No, it was awful.
How was the audience? They were enthusiastic.
How was the band?
How was the drummer? Just fantastic.
And what about the singer? Better than ever!
Did they play old songs? Not a single one.
So what did you do after the concert? ...

(42)



Every answer to a 'question' supplies a tight context connection. By uttering the question, discourse is brought forward, even if it only leads to the next question. It is, therefore, impossible to say that one reacts with an assertion to an open question and at the same time expresses that one does not make a directly relevant contribution to discourse. In this sense, *doch* is indirectly responsible for causality. It shows that the two issues are tightly related and the closest perceivable relation is the causal one.

However, *doch* does not only code the reference to the context in this sentential domain, but it also displays its regular meaning.[17]

3.3.3 The transparent meaning of *doch*

Relying on the modelling along the lines of *the topic is open*, one can also argue for the transparent use of *doch* (in *Wo*- and V1-clauses) (see Section 2.3) and does not have to assume that *doch* does not display its common meaning or makes only a very abstract contribution (cf. Önnerfors 1997: 170).

The transparent use can most directly be ascribed to the concessive cases (illustrated by (43) e.g.). Under this reading, a speaker is surprised or astonished because the issue involved is normally expected differently. And in this sense, the issue which is the reason for this attitude can always be under discussion because s/he assumes the opposite.

(43) concessive
Consultation hour
Appointments with the orthopaedic specialist are usually difficult to get.
Different with Dr. Ingenhorst. Appointments are available at short notice here.
Und das ist erstaunlich. Ist er doch sehr beliebt./Wo er doch
And this is striking *Is he* MP very popular/*Where he* MP
sehr beliebt ist.
very popular is
'And this is striking. As he is very popular.'
(extract from *Pinneberger Tageblatt*, 20/02/2015)

In (43), the relation is involved 'If a doctor is popular, appointments at short notice are usually not available.' Therefore, the question arises whether he is

17 Müller (2016: 406f.) explicates why other particles such as *eben*, *halt* or *auch* (which code a causal meaning more directly) are not better suited to code/support the relevant interpretations of *Wo*-clauses.

popular or not. As the answer is that he is popular, the issue that appointments at short notice are available is considered strange.

Even though the openness of the topic can be derived more straightforwardly when the concessive relation is involved, it can also be motivated if concessivity is not involved. In (44), the speaker motivates his/her assumption that it is understandable that the mayor cancelled the press conference with the assumption that he is very exhausted.

(44) non-concessive
When the delegation arrived from Beijing after 11 hours on the plane, the mayor cancelled the press conference which had been planned for the evening at short notice.
Und das ist verständlich. Ist er doch sehr erschöpft./Wo er doch sehr erschöpft ist.
And this is understandable. Is he MP *very exhausted/Where he* MP *very exhausted is*
'And this is understandable. As he is very exhausted.'
(extract from *Aachener Nachrichten*, 08/07/2015)

Section 3.3.2 presented the assumption from the literature that speakers tend to relate successive sentences causally to each other, if it is possible. In this sense, one might say that the hearer also expects the following sentence to be a motivation of the preceding one. In (44), this might be the case because the hearer has the expectancy that one of the perceivable explanations (such as p, r and s in (45)) is the correct motivation and the speaker could commit himself/herself to it in the following sentence.

(45) a. If the mayor is exhausted (p), it is understandable that he cancels the press conference (q).
b. If the mayor arrives at night (r), it is understandable that he cancels the press conference (q).
c. If the mayor got ill on the trip (s), it is understandable that he cancels the press conference (q).

If q (the consequence) is asserted, the question arises whether p, r and s provide the actual motivation. As all of them are possible explanations, the question arises whether they apply to the current discourse.[18]

18 The experiment in Section 3.1 shows that *Wo*- and V1-clauses can in principle be interpreted identically. Müller (2016: 373ff., 2017a: 246) presents concessive and non-concessive examples

At this point, it is justified to ask the question whether the view that every utterance evokes possibilities of its motivation is too redundant. However, data confirm (see below) that it can be assumed in relation to this kind of causal relation which is at hand in the *Wo*-clauses (and also in the V1-clauses) that the addressee is in fact expecting a motivation/justification for the preceding attitude to a greater extent than is the case with other clauses.

As explained in Section 2.1, *Wo*-VE-clauses always operate on the epistemic or illocutionary level. They do not offer a reason in order to explain an effect, but refer to evidence supporting an assumption or the motive for uttering a certain speech act (cf. Blühdorn 2006: 11).

Gohl (2000) analyses asyndetic causal structures which explain or justify previous conversational moves. (46) presents an example: The underlined contributions motivate proposals or dispreferred reactions to those.

(46) MEAT (Schwab 8; 15:18)

1 Erik: tausche mer <<p> deins isch kleiner.>
swap we yours is smaller
'Let's swap. Yours is smaller.'

2 Kai: gar net –
at all not
'Not at all.'

3 Uwe: noi nemm du i will bloße schtü[ck;=
no take you I want only piece
'No, you take it. I only want a piece.'

[nein (2 Silben) esse.
no (2 syllables) eat
'Eat it.'

4 Kai: i will doch net solche brocken.
I want MP *not such chunk*
'I do not want such a chunk.' (Gohl 2000: 100)

The structures which Gohl studies correspond most closely to epistemic or illocutionary motivations/justifications because higher entities than facts are being motivated. She (2002: 103) asks herself in reaction to what kind of contributions motivations of this kind get referred to and comes to the conclusion that the previous utterances require them:

from DeReKo for both clause types. The argumentation for a transparent use of *doch* can, therefore, be transferred to the occurrence of this mp in V1-clauses.

> An utterance is much more likely to be interpreted as an account, i.e. as an utterance explaining and/or justifying a previous conversational move, if the preceding utterance, by virtue of its sequential and social implications, calls for accounting.

Breindl & Waßner (2006: 58, Fn 7) assume that every non-ritual utterance can be controversial. Gohl (2000), however, names some concrete cases which are followed by explanations or justifications in her data. She refers to the unwanted reaction to a previous action (such as a rejected advice, the impossibility to answer a question), evaluations, orders, complaints or allegations. Ford (2000: 289ff.) also refers to contrasts as a further example of a preceding contribution provoking an explanation or justification. This concept is broad though (explicitly controversial propositions, negation of presupposed information, disagreement between speakers).

It is interesting for my argumentation that Ford (1993, 2000) and Gohl (2000) name such contexts. I assume that it can be deduced from the preceding utterance that the issue which is part of the motivation/justification is really open and not only purported as such. This is the case because an explanation is expected. The contents of the motivations/justifications which are plausible candidates are up for discussion because their acceptance is a precondition for them being the correct explanation.

The table in (47) shows with which proportions the contexts from Gohl and Ford occur in a random sample of 100 *Wo*-VE- (and V1-clauses) in DeReKo (archive Tagged C) (cf. Müller 2016: 411).[19]

(47) The preceding contribution in V1-/*Wo*-VE-clauses (random sample of size 100)

	V1	***Wo*-VE**
contrast	14	10
evaluation	35	32
unexpected reaction	–	–
order	–	–
complaint	–	8
allegation	–	34
other	51	16

19 It already applies to Gohl's and Ford's work that it is difficult to say more than stating that these contexts (can) occur together with explanations because the authors do not give information concerning their general occurrence. Ford (1993: 548) writes, in 53% of her cases contrast is at hand. However, I consider contrast such an unspecific/a typical category that it is not possible to evaluate the degree of speciality before one knows about its proportion in the corpus. The same applies to evaluations which Ford (1993) also already refers to. As Gohl does not present any figures, it is also difficult to judge her assumptions.

About half of the V1-data fall into the categories *evaluation* and *contrast* and these categories are similarly common among the *Wo*-clauses.[20] It is also interesting that these data suggest a division of labour between *Wo*-VE-clauses and V1-clauses (cf. Section 3.1). Complaints and allegations are dominant among the preceding utterances of *Wo*-clauses. In this random sample, however, they are absent in the V1-data. This fact is due to *Wo*-clauses displaying an additional concessive component more often than V1-clauses (cf. the distribution in (48)).

(48) Concessivity and/or causality in V1/*Wo*-VE-clauses

	V1	***Wo*-VE**
causal	87	16
causal + concessive	13	84

As I explained above, the concessive component is to be traced back to the motivation of certain attitudes. As complaints and allegations come about by a behaviour which is felt to be deviant, it is not surprising that concessivity plays a role in this context (cf. (49) and (50) e.g.)).

(49) Let's not be mundane, let's say I was still in the mood for music. Why should I go to a concert, if I have such nice CDs at home. Consequently, the day ends the way it started. Binary. Binary? Do you know what that means? No?

Wo **doch heute alles** **binär ist.**
Where MP *today everything binary is*
'As everything is binary today, though.'
(A98/APR.22936 St. Galler Tagblatt, 11/04/1998)

(50) coming about of the allegation: Although everything is binary, you do not know what *binary* means.

20 It is in fact problematic to draw the line to other categories. Among the V1-data, there are many assumptions and assessments which I did not interpret as evaluations in the narrow sense. If one did that, the numbers would increase. Contrast is also involved in attitudes such as being amazed or surprised which are also evaluations in the end. One might also think that contrast e.g. indicates or favours that something is understood as an assumption. It is never the case that the contrastive relation itself is motivated. If categories overlap, the question is which category is the relevant one.

An observation in connection with the aspect of an expected motivation/justification following certain types of utterances is that more than half of the *Wo*-VE-clauses (55%) from the random sample of 100 are difficult to omit. For V1-clauses, the numbers are even higher (68%). I take this as evidence for an increased expectation of their occurrence. It is decisive that this observation does not only refer to the concessive cases but also to non-concessive ones in which assumptions precede which require an explanation because they are imprecise or contain allusions. There are more examples of this kind among the V1-clauses which display the non-concessive cases much more often (87 vs. 16 hits) (cf. Müller 2016: 413). (51) and (52) show two examples of *Wo*-clauses which follow this pattern.

(51) Gebhard Schönfelder is asking himself now in what way the Christian Socialists want to distinguish themselves "As saving champion or as generous sponsor?" He says there is no decision yet. His parliamentary group already submitted an application on this subject because the DLRG needed help. He says he is curious where else the CSU will be feeling generous. They presented themselves as "saving champion and specialist for consolidating the budget" very recently.
Hoffentlich schlägt dieser Streit nicht auf die Verdauung. ***Wo*** *Hopefully affects this dispute not on the digestion As* **es doch im Rathaus nur noch dünnes Klopapier gibt…** *it* MP *in-the town hall only still thin toilet paper gives*
'Hopefully, this dispute will not affect the digestion. As only thin toilet paper is available in the town hall.'
(NUN07/JUN.01487 Nürnberger Nachrichten, 14/06/2007)

(52) Unfortunately, Hector cannot organise a scavenger hunt, as it takes place on the Internet in honour of Astrid Lindgren.
Aber ein bisschen mehr als eine Frage darf es zur *But a bit more than one question can it to-the* Feier des Jahres an dieser Stelle schon sein. ***Wo*** **wir doch** *party of-the year at this point* MP *be As we* MP **sowieso gerade in Bullerbü Ferien gemacht haben.** MP *right now in Bullerbü holidays made have*
'But it should be more than just one question in honour of the occasion. As we have just been on holiday in Bullerbü anyhow.'
(A07/SEP.00468 St. Galler Tagblatt, 03/09/2007)

The assumption of an expected explanation is important for my argumentation in order to motivate the openness of the issue which is expressed with the V1-/*Wo*-VE-clause in those cases in which no concessive meaning component is involved. As the numbers verify, this applies to a greater extent to the V1-clauses than to the *Wo*-clauses. Finding evidence for the expectedness of the motivation/justification, however, is less relevant for the *Wo*-clauses than for the V1-clauses. If concessivity is involved, the openness of the issue can easily be motivated by the unfulfilled/questioned expectation.

All in all, the considerations and empirical studies concerning the usage/occurrence of *Wo*-clauses in combination with the meaning of *doch* proposed in Section 3.3.2 lead to the assumption that there is no reason to assume that the particle is only used in a non-transparent/indirect way which forces the causal relation between two clauses.

The modelling which builds on *doch* referring to the openness of the topic also allows to bring in line the typical occurrence of the particle and the impression of the clause coding a certain emotional involvement (cf. Section 2.4). The particle is particularly suited to support this interpretation because the topic which is assumed to be open creates involvement on part of the speaker/author as it suggests that s/he is entering into an ongoing discussion. In the column-like texts, the author seems to intend to enter into a dialogue with the reader and thus to involve him/her. Depending on the attitude which gets motivated, the reader is also already addressed directly in the preceding utterance (or in the following context). By using *doch*, the reader is immediately involved because writer and reader have a joint conversational topic. The author has already made 'half a' contribution and the reader's reaction is desired (even though no direct dialogue arises here, of course).

This analysis of *doch* might also allow to explain a peculiarity of preposed *Wo*-clauses. Among 635 *Wo-doch*-VE-clauses in DECOW2014, there are only seven preposed cases. Among all the causal *Wo*-clauses in DeReKo which the query returned (in Section 2.2 only the postposed causal uses have been considered), there are approximately[21] 10 preposed occurrences, only one of them displaying *doch*. (53) and (54) show two examples.

21 It is not always possible to clearly decide that only the causal reading is possible. The sentences are sometimes ambiguous between the adversative reading and the use as a free (temporal) relative clause.

(53) ***Wo*** **wir gerade so schön unter uns sind**, da wollen
Where we now so nice among us are there want
wir's „denen da oben" mal richtig zeigen.
we-it those there above MP *really show*
'As we are in private so nicely right now, we really want to show "the top brass".' (RHZ07/NOV.22029 Rhein-Zeitung, 23/11/2007)

(54) ***Wo*** **die Katze nun sprichwörtlich aus dem Sack ist** und
Where the cat now proverbially out the bag is and
die Nominierten der sechs zu wählenden Kategorien vorgestellt
the nominated of-the six to elected categories presented
worden sind, verraten wir nachfolgend auch die Namen der
have been reveal we subsequently also the names of-the
weiteren Sportlerinnen, Sportler und Mannschaften, die
further sportswomen, sportsmen and teams which
vorgeschlagen worden waren.
suggested been were
'As the cat is literally out of the bag now and the nominees of the six categories have been presented, we will also reveal the names of the other sportswomen, sportsmen and teams which have been suggested in the following.'
(BRZ08/OKT.01748 Braunschweiger Zeitung, 04/10/2008)

Certainly, this type of clause should be subject to examinations as precise as pursued for the postposed *Wo*-clauses in this article. However, a first impression based on the data at hand should be allowed. *Doch* does not seem to occur in this sentential context dominantly. In DeReKo the query delivered all *Wo*-clauses and only in one example *doch* occurred in one of the preposed *Wo*-clauses which get a causal interpretation. In DECOW2014, the query only delivered *Wo-doch*-VE-clauses and the number of preposed clauses is vanishingly small. Among 32 *Wo-ja*-VE-clauses in DECOW2014, there were five preposed ones. (55) presents one example.

(55) ***Wo*** **wir jetzt ja kurz davor stehen, dass ungedeckt**
Where we now MP *shortly before stand that unprotected*
Geld gedruckt wird, stellt sich die Frage, warum
money printed becomes stands itself the question why
man nicht sinnvoller ans Werk geht.
one not more sensible to-the work goes
'As we are on the brink of printing uncovered money, the question arises why one does not work more sensibly.'
(http://www.markustrauernicht.de/)
(DECOW2014)

It might be the case that particles play a role in the preposed *Wo*-clauses which are less relevant in the postposed ones.

The preposed clauses seem to display a temporal reading much more clearly in comparison to the postposed *Wo*-clauses. Temporal adverbials often actually occur or could be added. A further argument for this interpretation derives from the occurrence of *eben* in these clauses. *Eben* is ambiguous as it can be used as a temporal adverb, a mp or an adjective. In the *Wo*-clauses, the temporal reading always seems to prevail (cf. (56) e.g.)).

(56) ***Wo*** **ichs** **<u>eben</u>** **seh:** (u txt) Chesterton ist ja
Where *I-it* *right now* *notice:* *(u txt)* *Chesterton* *is* MP
relativ unbekannt :)
relatively *unknown*
'As I am noticing it right now: As you might know, Chesterton is relatively unknown.'
(http://www.nachtwelten.de/vB/history/topic/34972-1.html)
(DECOW2014)

If *doch* occurred in the preposed *Wo*-clauses, my explanation for why it occurs in the postposed clauses so typically could not be transferred to this occurrence. As the causal clause precedes the attitude to be motivated, the topic can hardly be open before the second clause has been uttered. The first data available for this use, however, reveal that *doch* does not seem to be typical for this type of clause. The sentences seem to be interpreted primarily temporal. As shown in Section 3.3.2 when discussing basic meaning relations between utterances, temporal readings are preferably reinforced to causal relations. 'In the moment in which I am noticing it right now, I am telling you that Chesterton is relatively unknown.' turns into 'As I am noticing it right now, I am telling you that Chesterton is relatively unknown.' *Doch* is not necessary to enforce the causal relation and would be rather inapt. If these ideas point in the right direction, my modelling might also offer an explanation why the *doch*-V1-clauses always have to be postposed which is part of the description of the *motivating V1-declarative*-construction in Jacobs (2015: 58). In the relevant V1-clauses, *doch* is obligatory (cf. Müller 2016: 379f., 2017a: 251). In initial uses, the analysis of *doch* (as proposed above) does not offer itself and the only way out would be to assume that its meaning is only suggested, similarly to other discourse-initial uses of *doch* (cf. Müller 2017b: 393ff.). Without *doch*, the V1-clause cannot be preposed either because it does not have the temporal use the *Wo*-clause can supply. However, these thoughts on the preposed *Wo*-clauses are of a speculative nature and a precise study which includes a relevant number of examples is required.

4 Conclusion

All in all, this paper has shown that there is no need to doubt that the interpretation *Wo*-clauses receive can be transparently deduced. The introductory Section 1 provided examples which show that *Wo*-clauses are ambiguous in the sense of principally allowing a causal, concessive + causal, adversative, temporal or local interpretation. As far as the type of *Wo*-clause which is the focus of interest in this article is concerned, a number of unique properties have been attributed to it, such as its causal and/or concessive interpretation, the typical occurrence of *doch* and an expressive reading. These characteristics were described and discussed in Section 2. The clauses receive their causal interpretation on the epistemic or illocutionary level whereas concessivity applies in a propositional sense (Section 2.1). A corpus study which also compared the occurrence of *doch* in other similar causal clauses to the *Wo*-clauses revealed that *doch* is in fact very typical for the clauses (Section 2.2). The impression of an expressive meaning component could be made more precise by referring to data from the feature pages (Section 2.4). Section 3 then intended to offer an account of which factors allow deducing these properties. Results from a judgement study presented in Section 3.1 provide evidence for the fact that *Wo*-clauses can in principle receive a causal interpretation as well as a concessive + causal interpretation, the reading solely depending on the attitude which is motivated/justified. Corpus data, however, show that *Wo*-clauses seem to be actually used more often for motivating or justifying complaints and allegations (which involve the concessive interpretation) than V1-clauses. Verb positioning could not be proven to play a decisive role in deducing the clause's meaning (Section 3.2). The clauses have to be considered assertive even though they display VE-order and it is not the case that they always contain backgrounded or presupposed information or that they are anaphoric in some way. However, Section 3.3 argued in detail that much of the resulting interpretation can be attributed to the mp *doch*. Section 3.3.1 rejected a view from the literature that the proposition is always presupposed and that *doch* occurs to code this meaning. Its contribution is rather to indirectly code the causal reading. Assuming that *doch* indicates that the topic is already under discussion, it enforces relating the *Wo*-clause closely to the preceding context. Because of basic interpretation patterns the close connection gets interpreted as a causal relation. As the expression/paraphrase of an attitude precedes the *Wo*-clause and as the clause is illocutionarily independent because of its prosodic desintegration, this causal interpretation applies on the epistemic/illocutionary level. However, Section 3.3.3 has also shown that there is no need to deny *doch*'s transparent use in these clauses. The modelling of *doch* suggested does not run into problems as it does not have to retrieve an adversative

component (which is missing from some of the *Wo*-clauses). Rather, it allows to capture the impression of an expressive interpretation. As *doch* indicates that the topic the expressed proposition refers to is already open, speaker and addressee can be assumed to be directly involved in the discourse because a topic does not have to be opened up first. Finally, it was shown that this analysis also has good chances to be able to include preposed *Wo*-clauses which, however, still await a precise study.

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Corpora

Corpora from the Web ((DE)COW): http://hpsg.fu-berlin.de/cow/ [Schäfer & Bildhauer 2012]
Deutsches Referenzkorpus (DeReKo): https://cosmas2.ids-mannheim.de/cosmas2-web/ [Kupietz, M. et al. 2010 e.g.]

Hubert Truckenbrodt and Frank Sode

Parentheticals, root phenomena, and V2 in German

Abstract: The parentheticals that Ross (1973) analyzed in English in terms of *slifting* have the finite verb in C in German (V1-parentheticals). In English and German, they require a host clause that is a root clause. We review and extend the evidence for this here, in a comparison with German *wie*-parentheticals (and the corresponding English *as*-parentheticals). We then develop an analysis of this restriction.

In the analysis of Sode and Truckenbrodt (2018), which we extend here, root clauses are characterized by a silent attitudinal Force-head (building on the analysis of root-clauses by Haegeman 2003, 2004a,b). These Force-heads play a central role in the analysis of verbal mood and of V-to-C movement. The current extension formalizes the distinction between root-clauses that have V-to-C movement (V2 or V1) and V-final root clauses. We embed our analysis of the two parentheticals in this extended analysis. Core elements of the analysis are as follows.

(a) The Force-head of a V2/V1 clause gets the value for its attitudinal anchor and for its features through grammatical interactions. These include V-to-C movement. In V1-parentheticals, they also include the attraction of an attitudinal operator to Spec,ForceP. This operator requires a host clause that is a root clause. (b) The Force-heads of V-final root clauses are pronominal and get their attitudinal values from (not necessarily local) antecedents, not by grammatical interactions. Therefore they do not attract V-to-C movement. In *wie*-parentheticals, there is furthermore no reason for attracting the attitudinal operator that requires a root clause host.

Note: We would like to thank Katrin Axel-Tober, Joachim Jacobs, Horst Lohnstein, Manfred Krifka, Lisa Matthewson, Marga Reis, Uli Sauerland, Mathias Schenner, Susanne Uhmann, Ede Zimmermann, as well as audiences at the 2nd International Workshop on V2 in Wuppertal 2016 and at the Leibniz-Centre for General Linguistics (ZAS) in Berlin for helpful comments and support. All errors are of course our own. This research was supported by the German Federal Ministry of Education and Research (BMBF), Grant Nr. 01UG1411.

Hubert Truckenbrodt and Frank Sode, ZAS and Humboldt-University Berlin; Goethe-University Frankfurt/Main

https://doi.org/10.1515/9781501508141-012

Terminology and overview

We refer to *as Mary said* with the established name *as*-parentheticals and we refer to a parenthetical of the form *Mary said* (e.g. *It's raining, Mary said*) with the non-established name *bare parenthetical*, since we are not aware of a different name for this specific kind of parenthetical. We discuss these side by side with German examples. In German, *as*-parentheticals are introduced by *wie* (e.g. *wie Mary sagte* 'as Mary said') and bare parentheticals, as in English, lack a complementizer. In German, they are also called *V1-parentheticals* since they have the finite verb in C in V1 word-order (e.g. *sagte Mary*, 'Mary said').

This paper first reviews and extends a comparison of bare parentheticals with *as*-parentheticals. The distinction of particular interest here is that the host clause of bare parentheticals must be a root clause (Hooper and Thompson 1973, Steinbach 2007), which is not the case with *as*-parentheticals (Potts 2002). We develop an account of this distinction that builds on the analysis of root clauses in Haegeman (2003, 2004a,b) and our development of this in Sode and Truckenbrodt (2018). In the account, there is a connection between the form of the two parentheticals (with vs. without movement of the finite verb to C) and their different host clause requirements. Like the account of Sode and Truckenbrodt (2018), the current extensions are programmatic in nature.

In Section 1, we review basics of the analysis of bare parentheticals and *as*-parentheticals and their German counterparts, including the different host clause requirements. In Section 2, we discuss restrictions on the parenthetical predicates and show how they are related to restrictions on embedded V2. In Section 3, we extend the account of Sode and Truckenbrodt (2018) to the distinction between V-final root clauses and V2 root clauses. Section 4 analyzes the two parentheticals in this extended account. Section 5 sums up the central elements of the account.

1 The hosts of bare parentheticals in comparison with *as*-parentheticals

This section reviews central elements of the analysis of bare parentheticals and *as*-parentheticals and their German counterparts.

1.1 Core elements of Potts' analysis of *as*-parentheticals

We begin by introducing central elements of the analysis of *as*-parentheticals of Potts (2002). They will serve as a point of comparison for the analysis of bare parentheticals below.

Strengthening a point made earlier by Ross (1967):6.1.1.4, Potts (2002) argues in detail for movement of an empty operator in *as*-parentheticals. (1) shows a long-distance dependency. (2) illustrates the sensitivity to a relative-clause island, and (3) shows the sensitivity to an adjunct island.

(1) a. "… even though people were crabby and snappish … she DID, mostly, love them as she knew she ought to" (Jane Smiley, *Moo*, p. 26)
b. as Op_1 she knew she ought to t_1

(2) * Durians are delicious, exactly as Op_1 Nina spoke with [a grocer who claimed t_1]

(3) * Jim Durrow is a blackjack ace, just as Op_1 they smiled politely [when he reported t_1].

Potts suggests that this movement is semantically interpreted by lambda-abstraction. Thus, the syntactic structure in (4a) is assigned the meaning in (4b).

(4) a. as $Ø_1$ Mary claims t_1
b. λp claim(m, p) (here *m* is Mary)

Potts (2002) argued that *as*-parentheticals are syntactically regular adjuncts that have untypical semantics. What we are used to is that an element in a certain position of the syntactic structure is in the semantic scope of higher elements and that it itself has semantic scope over its syntactic sister. In Potts' analysis, *as*-parentheticals share that they scope over their syntactic sister but they are different insofar their meaning is not in the scope of higher elements. This is elaborated in the following, with the help of the example in (5a).

(5) a. It is not true that Ames stole the documents, *as Mary claims*.
b. *As*-parenthetical: Mary claims that Ames stole the documents.

The *as*-parenthetical scopes over its syntactic sister, underlined in (5a). This is informally so because the *as*-parenthetical receives the meaning in (5b), where its underlined sister from (5a) is now in the scope of the parenthetical verb. More

formally, the "λp" in (4b) applies to the meaning of the syntactic sister of the parenthetical (the underlined clause in (5a)), and converts it into the scope of the parenthetical verb, deriving (5b). The underlined element is thus interpreted twice, once as part of the main clause and in addition as part of the parenthetical.

The *as*-clause is not in the semantic scope of higher elements insofar the meaning it adds, (5b), is not added in the scope of the negated main clause in (5a). It is, more generally, not added as an extension of the meaning of the main clause but as separate information attributed to the speaker. In (5), the parenthetical allows the speaker to add the information that Mary claims that Ames stole the documents. The meaning of the main clause remains untouched by the parenthetical.

(6) schematically shows the meaning contribution of the *as*-parenthetical in (5). The meaning of its syntactic sister, underlined in (5), remains unchanged ($\lambda p_{<s,t>}$ p), and the meaning of the *as*-parenthetical is added as a separate conventional implicature that combines the words of the parenthetical (claim(m, ...)) with the meaning p of its syntactic sister (claim(m,p)).

(6) $[\![$as Mary claims$]\!] = \lambda p_{<s,t>}$ p,
conventionally implicating: claim(m, p)

In the remainder of Section 1, we develop a first understanding of some similarities and differences between bare parentheticals and *as*-parentheticals in several steps.

1.2 Syntactic movement in bare parentheticals

Ross (1973) argued for parenthetical-internal movement in bare parentheticals. We illustrate this with his examples in (7) – (9), to which we add empty operators and their traces. (7) shows a long-distance dependency, (8) a violation of the Complex NP Constraint and (9) a violation of the Coordinate Structure Constraint (with reference to the well-known constraints from Ross 1967).

(7) Max has a tuba, Op_1 I believe that Pete pointed out t_1 .

(8) * Max has a tuba, Op_1 I believe [your claim that Pete pointed out t_1].

(9) * Max has a tuba, Op_1 Ted [is reading a book] and [will find out t_1].

Thus both kinds of parentheticals involve parenthetical-internal movement.

1.3 No clause-internal scope for bare parentheticals

In this section, we show that *as*-parentheticals, but not bare parentheticals, can take clause-internal scope.

Consider the example in (10a) from Potts (2002). It has two readings, depending on the scope of the *as*-parenthetical relative to the negation. In the reading in (10b/b') the *as*-clause crucially scopes below negation: The senators claimed he stole the documents. The negation is not included in what the senators claimed, because the scope of the *as*-parenthetical is below the negation, as shown in (10b). The *as*-parenthetical may also scope above negation as in (10c). Here the negation is part of what the senators claimed, as shown in (10c').

(10) a. Ames did not steal the documents, *as the senators claimed*.
b. Ames$_1$ did not [[t$_1$ steal the documents], as the senators claimed].
b'. → the senators claimed he stole the documents
c. [Ames$_1$ did not t$_1$ steal the documents], as the senators claimed.
c'. → the senators claimed Ames did not steal the documents

Pittner (1995) has observed clause-internal scope with German *as*-parentheticals. (11a) allows the salient reading (11c), which is a clause-internal scope reading: Only the material below the clause-internal negation is here in the scope of the parenthetical. This reading is not available to (11b), where the parenthetical is above the negation. (11b) only has the reading in (11d).[1]

(11) a. Kohl wird nicht, *wie die Opposition vorschlug*,
Kohl will not as the opposition suggested
die Steuern erhöhen.
the taxes raise
'Kohl will not, as the opposition suggested, raise taxes.'

b. Kohl wird, *wie die Opposition vorschlug*, nicht die
Kohl will as the opposition suggested, not the
Steuern erhöhen.
taxes raise
'Kohl will, as the opposition suggested, not raise taxes.'

1 (11a) also allows the reading in (11d). Though Potts (2002) discusses other cases of complex scope-taking in Section 4 of his paper, it is not clear to us how his theory would analyze this reading. However, the issue does not affect the point that there is a clause-internal scope reading: the reading with parethetical scope below negation in (11c) is only available if the *as*-parenthetical is below negation on the surface.

c. The opposition suggested to raise the taxes.
d. The opposition suggested not to raise the taxes.

Pittner mentions that no evidence for (clause-internal) scope-taking of this kind can be found for bare parentheticals. We illustrate this with (12) in English and with (13) in German.

(12) Ames did not steal the documents, *the senators claimed*.
→ the senators claimed that Ames did not steal the documents
not a possible reading: they claimed that Ames stole the documents

(13) a. Kohl wird nicht, *sagte die Opposition*, die Steuern erhöhen.
Kohl will not said the opposition the taxes raise
'Kohl will not, the opposition said, raise taxes.'

b. Kohl wird, *sagte die Opposition*, nicht die Steuern erhöhen.
Kohl will said the opposition not the taxes raise
'Kohl will, the opposition said, not raise taxes.'
both: → The opposition said that Kohl will not raise the taxes.
not a possible reading of either: The opposition said that Kohl will raise the taxes.

Ross (1973) formulated a rule of *slifting* (short for *sentence lifting*) that derives a bare parenthetical and its host clause from a matrix clause and an object clause. The idea of the rule is sketched in (14).

(14) *Slifting*
a. The senators claimed [that Ames did not steal the documents]. →
b. [Ames did not steal the documents], the senators claimed.

A condition on *slifting* was that the constituent that is turned into the host clause is a finite *that*-clause before *slifting*. (*Slifting* also includes the deletion of the complementizer *that*.) This restriction captures the limitation of bare parentheticals to CP-scope that we saw in this section.

1.4 Bare parentheticals as root phenomena

Bare parentheticals are not only restricted to scope over their host clause. Only certain host clauses will do. This is discussed in the current section and in the following section.

Hooper and Thompson (1973) discussed a range of English root transformations – transformations that may occur only in what they classify as asserted clauses in a wider sense. The clauses in which these transformations may occur have later come to be called *root clauses*; see Heycock (2006) for more recent review and discussion. One of the root transformations of Hooper and Thompson (1973) is *complement preposing*, which is, in its essence, the *slifting* transformation of Ross (1973) that derives bare parentheticals from main clauses. Steinbach (2007) makes a related observation for German V1-parentheticals: They are root phenomena. Their host clause must be a root clause. This is the formulation we will employ in the following.

We turn to some examples. Hooper and Thompson (1973) distinguish restrictive relative clauses (not root clauses) from non-restrictive ones (root clauses). Their examples in (15) (p.489) show how the bare parenthetical is allowed only with a non-restrictive relative, i.e. a root clause, as its host.

(15) a. The captain, [who is (*I think*) our best player], will graduate next year.
b. The boy [that is (**I think*) our best player] will graduate next year.
(* in a restrictive reading of the relative clause)

Hooper and Thompson similarly distinguish restrictive, presupposed, adverbial clauses (not root clauses) from non-restrictive, non-presupposed, adverbial clauses (root clauses). Bare parentheticals are allowed in the root clauses as in (16a) but not in the restrictive adverbial clauses as in (16b) (see pp. 493ff).

(16) a. It's been raining, [because there are puddles outside] (*I am afraid*).
b. The customer stomped out [after the clerk (**I guess*) insulted her].

Steinbach (2007) makes a similar case for German V1-paretheticals. His examples with the relative clause contrast are shown in (17). Here (17b) employs a relative clause within a quantified expression that enforces a restrictive reading.

(17) a. Hans beweist ein Theorem, das (*glaube ich*) Martin aufgestellt hat.
Hans proves a theorem that believe I Martin put.up has
'Hans is proving a theorem that (I believe) Martin has put up.'

b. Hans beweist kein Theorem, das (**glaube ich*) Martin aufgestellt hat.
Hans proves no theorem that believe I Martin put.up has
'Hans is proving no theorem that (I believe) Martin has put.'

Steinbach's discussion of the German adverbial clauses employs an adverbial clause in the scope of negation in the main clause. It cannot be a root clause, a test employed by Hooper and Thompson (1973) for other root transformation. We show Steinbach's argument with related examples in (18).

(18) a. Hans hat die Mixtur [nicht getrunken], [weil er
Hans has the mixture not drunk because he
sie (*glaube ich*) nicht bekommen hat].
it believe I not received has
'Hans did not drink the mixture since he has not (I believe) received it.'

b. Hans hat die Mixtur nicht [getrunken, weil sie (**glaube*
Hans has the mixture not drunk because it believe
ich) gut schmeckt], sondern weil sie gesund ist.
I good tastes but because it healthy is
'Hans did not drink the mixture because it tastes good (I believe),
but because it is healthy.'

1.5 Parentheticals in conditionals

Conditionals allow for another striking comparison between *as*-parentheticals and bare parentheticals. By way of background, note first that a standard conditional as a whole is a single assertion. The conditional in (19a) asserts that under circumstances like the known ones but with it raining, "they" will come back early.[2] The antecedent of the conditional is an embedded clause; its content is not asserted in any sense and it is thus not a root clause. The consequent is a declarative, and the assertion that it makes is complete only with the *if*-clause: the proposition of the consequent is asserted to hold only under the circumstances described in the *if*-clause. In that sense the antecedent has scope within the assertion. We could thus represent the assertive impact as in (19b).

(19) a. If it rains, they will come back early.
b. ASS [if it rains, they will come back early]

2 See e.g. Lewis (1973), Stalnaker (1975) and much later literature for accounts along these lines. Stalnaker also gives arguments against an analysis of conditionals in terms of the material implication.

The flexibility of *as*-parentheticals allows them to operate on the antecedent separately, as in (20) and the corresponding German example (21):

(20) If [it rains], *as Mary said*, they will come back early.
→ Mary said that it will rain.

(21) Wenn [es regnet], *wie Maria gesagt hat*, werden sie früher zurückkommen.
→ Maria said that it will rain.

Likewise, the *as*-parenthetical can operate on the consequent separately, as in (22) and the corresponding German example (23):

(22) [Mary predicted that they will come back early.]
If it rains, [they will come back early], *as Mary predicted*.
→ Mary predicted that they will come back early.

(23) Wenn es regnet, [werden sie früher zurückkommen], *wie Maria vorhersagte*.
→ Mary predicted that they will come back early.

A bare parenthetical does not have either of these readings:

(24) a. If it rains, *Mary said*, they will come back early.
b. If it rains, they will come back early, *Mary said*.

(25) a. Wenn es regnet, *sagte Maria*, werden sie früher zurückkommen.
b. Wenn es regnet, werden sie früher zurückkommen, *sagte Maria*.

Instead, both (24a) and (24b) (and (25a,b)) only have a reading in which the scope of the bare parenthetical is the entire conditional, i.e. the smallest asserted clause and thus the smallest root clause. This smallest root clause is bracketed in (26). The scope of the bare parenthetical is this root clause.

(26) [If it rains, they will come back early] Mary said.

Thus, conditionals provide further striking testimony to the following two points. First, Potts' analysis of *as*-parentheticals correctly captures their nature as operating on their syntactic sister and adding the parenthetical meaning in an additional dimension. Second, bare parentheticals do not share this property; instead, they obey the restriction that their host clause is a root clause.

1.6 Bare parentheticals and perspective

Reinhart (1983) was interested in declarative host clauses with 3rd person parenthetical subjects. She argues that two cases need to be distinguished. In the first case, the main clause is asserted by the speaker and the parenthetical provides the source of, or evidence for, the speaker's assertion. We will call this an *evidential bare parenthetical*.

(27) Evidential bare parenthetical
Speaker-oriented main clause, parenthetical providing source or evidence
John will be late, *he said*.

(28)	Hans	wird	zu	spät	kommen –	*sagte*	*er*.
	Hans	will.IND	too	late	come	said	he

In the second case of Reinhart's distinction, the main clause is not a speaker assertion but is reported from someone else's perspective and the parenthetical describes this other person's perspective. In German, this reading can be forced by German subjunctive in the host clause (the subjunctive excludes the actual speaker perspective); however, it seems to also be possible with indicative in both English and German. We will call this the *shifting bare parenthetical*. Note that the *would* in (29) is the past tense of *will* that arises under tense-agreement with the past tense in the parenthetical, according to Reinhart.

(29) Shifting bare parenthetical
Main clause from the perspective of the parenthetical's subject
He would be late, *John said*.

(30)	Er	werde/wird	zu	spät	kommen,	*sagte*	*Hans*.
	he	will.KONJI/IND	too	late	come,	said	Hans

Reinhart distinguishes the two cases in terms of a range of criteria, including pronominalization (the distinction can be seen in (27) vs. (29)), whose words are used (the ones of the perspective holder: the speaker in the evidential case, the parenthetical subject in the shifted case), tense agreement in (29) but not (27), the possibility of inversion in the English parenthetical, the possibility of *or so* in the parenthetical, the embeddability of the parenthetical, and the intonation.

We think that in German, the evidential reading in (27) is quite marginal. It seems to us that it is possible only where the V1-parenthetical occurs after

its host clause, is separated from it by a longer pause and is destressed like an afterthought. This intonation is different from the intonation that separates the two readings in English, according to Reinhart. In German, the by far most prominent reading of V1-parentheticals is the shifting reading in (29). The near-absence of the evidential reading that we postulate converges with the judgments about pronominalization as they are assessed in terms of Condition C effects by Pittner (1995). They reflect the situation of English parentheticals in the shifting reading as in (29) as assessed by Reinhart. We will from now on talk about German V1-parentheticals in this prominent, shifting reading.

Reinhart (1983) argues against Ross' *slifting* derivation: There are host clauses that allow bare parentheticals without being a possible complement to the parenthetical predicate. This is also true for German, see Pittner (1995), Reis (1996) and references there. We will therefore develop an analysis using operator movement instead of *slifting*.

2 Parenthetical verbs and the relation to embedded V2

We turn to restrictions on the parenthetical predicates. This will lead us to a parallel to embedded V2.

2.1 Bare parentheticals and predicates embedding V2

Hooper and Thompson (1973) relate *complement preposing* (the formation of our bare parentheticals) to root transformations in two ways. First, complement preposing is a root transformation. Applied to (31), this means in our terms that *Mary thinks that it's raining* must be a root clause before the transformation applies. In (31) it is a root clause because it is unembedded and asserted. Since *Mary thinks that it's raining* is in an assertive environment before the transformation applies, *It's raining* (the host clause of the parenthetical) is in an assertive environment after the transformation. This restriction will block complement preposing in a restrictive relative clause or in a central adverbial clause like *when Mary thinks that it's raining*. It is, in different terms, the restriction we discussed above that the host of the bare parenthetical must be a root clause.

(31) Mary thinks that it's raining. → It's raining, Mary thinks.

root clause

root clause

The second restriction is that complement preposing is only allowed with matrix verbs in whose complements root transformations can apply. Applied to (31), this means that complement preposing can only apply to *that it's raining*, since *that it's raining* is embedded under the verb *think* which is one of the assertive-like verbs in whose complement root transformations can apply. In terms of root clauses, we can formulate this restriction as follows: *that it's raining* must also be a root clause for complement preposing to apply. In more detail: Hooper and Thompson (1973) relate their verb classes A, B, and E to *assertion* of their complement clauses while their verb classes C and D do not have this assertional relation. The assertional predicates share two properties: (a) these predicates allow root transformations to apply in their complement clauses, and (b) these predicates occur in *complement preposing*, which is a separate observation. In our terms, this means that assertive predicates (a) allow their complement clauses to be root clauses and (b) occur in bare parentheticals. Conversely, non-assertional predicates allow neither (a) nor (b).

Here we allow that English and German differ in the delineation of these predicates (and perhaps also in the details of the mechanism restricting them). However, we think that this parallel is also relevant for German, in the following way. Following Heycock (2006) and others, we classify V2 as a root phenomenon, insofar it occurs in unembedded position and embedded in the complement clause of broadly assertion-related verbs (Reis 1997). With that, the combination of the two generalizations of Hooper and Thompson amounts to this for V2: the verbs that embed V2 (i.e. embed root-phenomena) should be the same as the ones that occur in V1-parentheticals (i.e. German bare parentheticals).

Reis (1997) describes the verbs that embed V2-clauses as mediated assertions ('vermittelte Assertionen'). Furthermore, Reis (1996):64ff describes the classes of verbs embedding V2 and those occurring in V1-parentheticals as "largely coextensive". She discusses certain preference predicates as an exception; we briefly return to this class in Section 3.1.

In (32) – (37), we demonstrate this parallel with a range of predicates, drawing on Sode and Truckenbrodt (2018). As will be seen in Section 3, the verbs we employ are ones for which we have some analysis of their meaning. The a-examples show an embedded V-final complement clause introduced by *dass* 'that' (underlined), which is acceptable in all these cases. The b-examples show the replacement of the complement clause by a finite V2 complement (here the finite verb in C is boldfaced). The verbs that allow this in (32) – (34), *glauben* 'believe', *sagen* 'say', and

träumen 'dream', are among those characterized as broadly assertive by Reis (1997), see also Gärtner (2000, 2002), Featherston (2004), Meinunger (2004), Heycock (2006), Truckenbrodt (2006a, b), Antomo and Steinbach (2010), Reis (2013), and Lohnstein (to appear) on V2 complement clauses.[3] The c-examples show that (in this sample), only the verbs that embed V2 also occur in V1-parentheticals.

(32) a. Maria glaubt, dass Peter nach Wuppertal kommt/komme.
Maria believes that Peter to Wuppertal comes.IND/KONJI
'Maria believes that Peter is coming to Wuppertal.'

b. Maria glaubt, Peter **kommt/komme** nach Wuppertal.
Maria believes Peter comes.IND/KONJI to Wuppertal
'Maria believes that Peter is coming to Wuppertal.'

c. Peter **kommt/komme** nach Wuppertal, *glaubt Maria*.
Peter comes.IND/KONJI to Wuppertal, believes Maria
'Peter is coming to Wuppertal, Maria believes.'

(33) a. Maria sagt, dass Peter nach Wuppertal kommt/komme.
says
b. Maria sagt, Peter **kommt/komme** nach Wuppertal.
(a) and (b): 'Maria says that Peter is coming to Wuppertal.'
c. Peter **kommt/komme** nach Wuppertal, *sagt Maria*.
'Peter is coming to Wuppertal, Maria says.'

(34) a. Maria träumt, dass Peter nach Wuppertal kommt/komme.
dreams
b. Maria träumt, Peter **kommt/komme** nach Wuppertal.
(a) and (b): 'Maria is dreaming that Peter was coming to Wuppertal.'
c. Peter **kommt/komme** nach Wuppertal, *träumt Maria*.
'Peter is coming to Wuppertal, Maria is dreaming.'

(35) a. Maria leugnet, dass Peter nach Wuppertal kommt/komme.
denies
'Maria denies that Peter is coming to Wuppertal.'
b. *Maria leugnet, Peter **kommt/komme** nach Wuppertal.
c. *Peter **kommt/komme** nach Wuppertal, *leugnet Maria*.

3 Restrictions on V2 need to be distinguished from restrictions on V2 with indicative. See Sode and Truckenbrodt (2018) on the additional contribution of the indicative.

(36) a. Maria will, dass Peter nach Wuppertal kommt.
wants
'Maria wants Peter to come to Wuppertal.'
b. *Maria will, Peter **kommt/komme** nach Wuppertal.
c. *Peter **kommt/komme** nach Wuppertal, *will Maria*.

(37) a. Es ist möglich, dass Peter nach Wuppertal kommt.
it is possible
'It is possible that Peter is coming to Wuppertal.'
b. *Es ist möglich, Peter **kommt/komme** nach Wuppertal.
c. *Peter **kommt/komme** nach Wuppertal, *ist (es) möglich*.

Why does the generalization of Hooper and Thompson hold, that the verbs embedding root transformations (here: verbs embedding V2) are the same as the verbs allowing complement preposing (here: verbs occurring in bare parentheticals)? We turn to Bolinger (1968) for a first interesting idea.

2.2 Bolinger's idea of the modulation of an element in the left periphery

The point of departure of Bolinger (1968) was similar to Ross' later *slifting* transformation and the *complement preposing* of Hooper and Thompson: Bolinger compared (38a) and (38b).

(38) a. I believe [they're ready].
b. [They're ready], I believe.

Bolinger discussed predicates that don't allow the "postposed main phrases (PMPs)" in (38b). These include predicates of doubting and denying as in (39), in parallel to our German cases in (35).

(39) a. I doubt [that it's relevant].
b. * [It's relevant], I doubt.

They further include what Bolinger called "predicates of causing" (p. 5), which we could also classify as predicates establishing a preference or an obligation.

(40) a. I insist that it stop immediately.
b. * [It stop immediately], I insist.

These are comparable to our German examples with *wollen* 'want' in (36).

Bolinger arrives at the suggestion to characterize the verbs that allow parentheticals

> "in terms of a mental picture or representation to the mind. If we think of every declarative sentence as carrying some such element as *I represent that*, e.g.,
>
> [...] (I represent that) John has the money.
>
> we equip the sentence with a slot in which PMPs and other sentence adverbs fit, as a way of tempering the representation: expressing varying degrees of firmness in relation to any participant in the situation." (Bolinger 1968: 16)

Semantically, this leads to an interesting model for the understanding of bare parentheticals: The parenthetical interacts with a silent element in the left periphery of the main clause, as informally represented in (41). The arrow indicates this interaction.

(41) ~~(I represent that)~~ It's all right, *I guess*.

Bolinger's modulating interaction captures the restriction illustrated in (39) and (40): Doubt and denial, but also preferences and obligations are not modulations of representing content in an assertive-like fashion.

This appealing idea becomes even more interesting when it is combined with a suggestion of Liliane Haegeman. Building on the structure of the left periphery of Rizzi (1997) in (42), Haegeman (2003, 2004a, b) argued that the Force-projection is specific to root clauses and she suggested in Haegeman (2004a, b) that it involves speaker-anchoring, which we highlight in (43).

(42) Force > (Top*) > (Foc) > (Top*) > Fin (brackets: optional; *: iterable)

(43) Haegeman (2004a, b): Root clauses have a ForceP that involves speaker-anchoring.

If root clauses, and only these, have an assertion-related representation in the left periphery that a bare parenthetical can modulate, then we have, here, a conceivable reason why bare parentheticals require a root clause host: They might operate on this assertion-related representation in the left periphery.

We find this to be an appealing picture. In the following Section 2.3, we will further strengthen it. However, in the Section 2.4 after that, we will move on to make an additional point that requires us to let it go again. After that, we employ its pieces for putting together a modified version of it.

2.3 A contribution of bare parentheticals in unembedded reported speech

In this section, we add a piece of support for the view shown in the preceding section. Our observation comes from unembedded reported speech, which is possible in German, unlike in English. In this sentence-form, the markers of reported speech (reportative subjunctive, morphologically Konjunktiv I or II), mark an unembedded clause. The unembedded clause is then interpreted as a report of what a third person said. On the analysis of reported speech in German, see Jäger (1971), Lohnstein (2000), Fabricius-Hansen and Sæbø (2004), Schlenker (2003), and Sode (2014).[4] Sode (2014) argued that the contribution of the V2 sentence form (here Bolinger's "x represents that") is shifted to the third person attitude holder, i.e. if V2 normally marks an assertion by the speaker, then V2 in unembedded reported speech marks an assertion of that third person. An example of unembedded reported speech is shown in (44).

(44) Peter war zufrieden. Maria habe seinen Vorschlag
Peter was content Maria has.KONJI his suggestion
angenommen
accepted
'Peter was content. *He said that* Maria accepted his suggestion.'

Unembedded reported speech requires an antecedent for the implicit third person attitude holder. In the absence of a cue about this attitude holder, infelicity results, as in (45).

(45) [Wir saßen im Kreis.]
'We sat around in a circle.'
#Maria komme später
Maria come.KONJI later.

Instead of an antecedent, a V1-parenthetical can supply the identity of the attitude holder, as in (46).

4 Note that unembedded reported speech (German: "berichtete Rede", see Fabricius-Hansen 2016) is different from free indirect discourse (German: "erlebte Rede"), a style of narration studied in Sharvit (2004), Schlenker (2004), and Eckardt (2015). The latter retains indicative morphology but also shows some evidence for perspective shifting, e.g. in the interpretation of indexical temporal adverbs.

(46) [Wir saßen im Kreis.]
'We sat around in a circle.'
Maria komme später, sagte Peter.
Maria come.KONJI later said Peter.
'Maria would come later, Peter said.'

Importantly, a parenthetical with *wie* 'as' cannot take on that function as readily, as shown in (47).

(47) [Wir saßen im Kreis.]
'We sat around in a circle.'
#Maria komme später, wie Peter sagte.
Maria come.KONJI later as Peter said.
'Maria would come later, as Peter said.'

Bolinger's approach allows us to think of (45) – (47) as shown in (48). An unknown identity of the attitude-holder in (45) is not allowed, as shown in (48a). The V1-parenthetical supplies this identity in (46), since it directly interacts with this slot in the left clausal periphery, as shown in (48b). The *wie*-parenthetical in (47) does not operate on this slot but on the propositional content of the host clause (or a part of it), following Potts. This is indicated in (48c). It can therefore not (or not as readily) supply a value for the attitude-holder.

(48) a. (~~?? represents that~~) Maria komme später.
Maria come.KONJI later

b. (~~Peter represents that~~) Maria komme später, sagte Peter.
Maria come.KONJI later said Peter

c. (~~?? represents that~~) [Maria komme später], wie
Maria come.KONJI later as
Peter sagte.
Peter said

These observations strengthen the case that bare parentheticals (in German: V1-parentheticals) directly operate on a representation of a silent attitude in the left periphery of root clauses.

In the following section, we turn to an observation that is problematic for this account in the simple form in which it was pursued up to here.

2.4 *As*-parentheticals obey the same restriction on the parenthetical predicates

It turns out that *as*-parentheticals also obey the predicate restriction that we just discussed for bare parentheticals. We illustrate this with extensions of Bolinger's examples in (49c) and (50c).

(49) a. I doubt [that it's relevant].
b. * [It's relevant], I doubt.
c. * [It's relevant], as Mary doubts.

(50) a. I insist that it stop immediately.
b. * [It stop immediately], I insist.
c. * [It stop immediately], as Mary (also) insists.

Given the account of Potts (2002), we would expect at least (49c) to be acceptable, with the following readings. The speaker maintains that it's relevant, and adds the conventional implicature that Mary doubts that.

The following German examples are extensions of the paradigms in (32) – (37). They make the same point.

(51) Peter **kommt** nach Wuppertal, *wie Maria glaubt / sagt / träumt*.
Peter comes.IND to Wuppertal, as Maria believes / says / träumt
'Peter is coming to Wuppertal, as Maria believed / said / dreamed.'

(52) *Peter **kommt/komme** nach Wuppertal, *wie Maria leugnet*.
as Maria denied

(53) ?? Peter **kommt/komme** nach Wuppertal, *wie Maria will*.
as Maria wants

(54) *Peter **kommt** nach Wuppertal, *wie (es) möglich ist*.
as it possible is

This restriction requires an amendment to Potts' account. Furthermore, it casts doubt on the simple but interesting account that Bolinger formulated. This is because Bolinger's suggestion does not carry over to the analysis of *as*-parentheticals. We

saw throughout that *as*-parentheticals do not require a root clause host. Therefore, they cannot require an element characteristic of root clauses in the left periphery of their host clause. Therefore, their predicate restriction cannot be explained in terms of them representing a modulation of such an element in the left periphery of their host clause.

2.5 Towards an analysis of the predicate restriction

The fact that both kinds of parentheticals obey the predicate restriction suggests to us that the issue is related to the trace position of movement in both kinds of parentheticals. Our analysis is illustrated in (55) and (56). In both bare parentheticals and *as*-parentheticals, the complement of the parenthetical verb is an empty root clause, i.e. a complex operator that is formally a ForceP: [Force Op]. This enforces the predicate restriction to root clause embedding predicates in both kinds of parentheticals. With a bare parenthetical as in (55), the moving operator is then [Force Op]. After having moved to the left periphery of the parenthetical, it requires, by assumption, a matching antecedent that is likewise a ForceP: the root clause host of bare parentheticals. With *as*-parentheticals, only *Op* moves, as shown in (56). Since Op is not a ForceP, it does not require a ForceP antecedent as its host constituent.

(55) Host clause bare parenthetical
[**Force** it's raining] [[**~~Force~~** ~~Op~~]$_1$ Mary said [**~~Force~~** ~~Op~~]$_1$]

(56) Host clause *as*-parenthetical
... it's raining [as Op$_1$ Mary said [**Force** Op$_1$]]

Assuming these representations, the question why bare parentheticals require a root clause host now takes a more specific form. With both parentheticals being ForcePs, as we will argue, this question now takes the following form: What is it about the Force head of bare parentheticals that attracts [Force Op], and why does the Force head of *as*-parentheticals not require the same? In German, bare parentheticals involve V-to-C movement ("V1-parentheticals"), while *as*-parentheticals (*wie*-parentheticals) have the finite verb in clause-final position, i.e. no V-to-C movement. In the following, we are therefore interested more generally in differences between the Force-heads of root clauses with V-to-C and the Force-heads of V-final root clauses.

3 The analysis of V-final root clauses and root clauses with V in C

In this section, we develop an extension of the suggestions of Sode and Truckenbrodt (2018). This is groundwork for the analysis of the two kinds of parentheticals in the later Section 4. Central issues in the current section are the representation of root clauses with V-to-C, the representation of V-final root clauses, and their distinctions. However, we begin with some more general issues.

3.1 Different motivations for V-to-C

We assume that V-to-C movement can be connected to different features in C. We think that there are at least three such features. We correlate one of them with broadly assertion-related occurrences in the sense of Hooper and Thompson (1973). This class includes declaratives like (57a) and V2 complement clauses like (57b). A second class is correlated with requests like the imperative in (57c). A third class seems to allow replacing clauses introduced by *wenn* 'if' by V1- or V2-clauses. Next to conditional V1-clauses like (57d), we also place V2-clauses like (57e) into this class. See Sode (2018) for semantic arguments for putting (57e) in this class.

(57) a. Die Sonne **hat** geschienen.
the sun has shone
'The sun has shone.'

b. Maria sagt, [die Sonne **hat** geschienen].
Maria says the sun has shone
'Maria says the sun was shining.'

c. **Gib** mir bitte den Computer.
give me please the computer
'Please give me the computer.'

d. [**Dreht** sie sich nochmal um], wird alles gut.
turns she herself again around becomes all well
'If she turns around again, all will be well.'

e. Es ist besser, [du **kündigst** ihm]. (Reis 1997)
it is better you give.notice him
'It is better if you give him notice.'

Note that (57e) exemplifies V2 under certain preference-predicates, for which Reis (1996) noted that the matrix clause can not be converted into a V1-parenthetical. Semantically, the embedded V2-clause here replaces a *wenn*-clause ('if'-clause), while the V2-clauses in the category in (57b) replace *dass*-clause ('that'-clauses). Given this classification, Hooper and Thompson's generalization applies to the first class in (57a/b) of our classification: All and only the assertive-like predicates like *Maria sagt* 'Mary said' in (57b) that can occur in a matrix clause with a V2 complement can also occur in a V1-parenthetical.

The account of Sode and Truckenbrodt (2018), which we extend here, maintains that V-to-C movement entails root clause status in the first two classes of our division, i.e. in (57a-c).

3.2 The representation of root clauses and embedded V2

In Sode and Truckenbrodt (2018), we suggest an account of a range of German verbal mood forms, of German V-to-C movement of the kind in (57a-c) and of its interaction with verbal mood. A pivotal role in that account is played by a way of making the speaker anchoring of Haegeman (2004a, b) more concrete. Recall that this occurs in Force in root clauses. We suggest the two Force heads in (58). Here $BEL_{x,t,w}$ relates to the beliefs of individual x a time t in world x. It is crucial for the analysis of the first class of V-in-C-clauses in (57), i.e. for (57a,b). It semantically expresses that the proposition of the clause is believed by x at t in w. Further, $WANT_{x,t,w}$ is crucial for the analysis of the cases of V-to-C movement related to (57c). It expresses, broadly, that x wants the proposition of the clause at t in w. We call the triple <x,t,w> the anchor in the following.[5]

5 The characterization of standard root clauses in terms of $BEL_{x,t,w}$ builds on characterizations of root clauses as broadly related to assertions (see e.g. Hooper and Thompson 1973, Stowell 2005, Reis 1997, 2006), and on the characterization of the supplements of Potts (2005) as involving a commitment by someone in Harris and Potts (2009); we take commitments to be public beliefs (Gunlogson 2003, 2008, Krifka 2015) or equivalently expressed beliefs in the sense of Searle (1975). The characterization of standard root clauses in terms of $BEL_{x,t,w}$ also rests on suggestions to represent declaratives with a belief- or saying-related meaning. Next to Bolinger (1968), this includes Ross (1970), Gärtner (2002), Gunlogson (2003, 2008), Poschmann (2008), Cinque (1999), Speas (2004), Hacquard (2006), Truckenbrodt (2006a, b), Giorigi (2010), and Krifka (2015), among others. See also Sauerland and Yatsushiro (2017) for support of the representation of such attitudinal speech-act related elements in the left periphery of the clause from *remind-me* presuppositions: *What is your name again?* ≈ Bring it about that (again (we/I know (what your name is))). A closely related approach is pursued in Lohnstein (to appear). The idea there is that

(58) Syntactic representations of speaker anchoring in Force:
$BEL_{x,t,w}$: The proposition of the clause is believed by x at time t in world w
$WANT_{x,t,w}$: Futures in which the proposition of the clause comes true are preferred by x at t in w to those in which it does not come true.

In this section, we review the suggestion for embedded V2 in Sode and Truckenbrodt (2018), which will play a crucial role in our account of parentheticals.

Schematic meanings of the verbs that allow a V2 complement-clauses are shown in (59). These conform to the following generalization. Let p be the meaning of the embedded clause. Then these predicates always embed p immediately under a belief-component of the verb's meaning. In other words, verbal meaning and complement clause together include a meaning component 'x believes p', as highlighted by underlining in (59). We employ a decomposition of saying that follows the analysis of assertive speech acts by Searle (1975): asserting p (here: saying p) is expressing the belief that p. We also adopt the decomposition of dreaming as believing in one's sleep from Heim (1998).[6]

(59) a. x believes p
b. x says p ≈ x expresses that x believes p (after Searle 1975)
c. x dreams p ≈ in x's sleep, x believes p (Heim 1998)

The predicates in our sample that do not allow embedded V2-complements are shown in (60). A simple decomposition of denying (also used in Schlenker 2005) is employed in (60a). Further, (60b) is a simplification[7] (for the purposes of giving an intuitive idea) of the analysis of wanting in Heim (1992), based on Stalnaker (1984). While the verbs in (60a) and (60b) contain belief-components, these do not directly embed p, the meaning of the complement clause. The belief-component and p are separated by 'it is not the case that' in (60a) and by other modal meaning components in (60b).

---

the C-system connects temporal and situation variables from the propositional meaning of the clause to the parameters of the speech situation or shifted situations.

6 Heim employed this decomposition for modelling *de re* and *de se* readings of dream reports in terms of the self-ascription of certain acquaintance relations in ones sleep. Our adopting Heim's decomposition is tentative and the suggestion itself may also have been tentative. See also Anand (2007), Yanovich (2011), Ninan (2012), Kauf (2017), and Pearson (2018) on the complexities of this predicate.

7 This formulation is slightly different from the formalization in Heim (1992) insofar as Heim's formulation also computes a subjective p and a subjective not-p relative to the beliefs of the speaker, but does not embed the preference under the belief. The formulations seem to have the same effect so long as what a person wants is not hidden from that person.

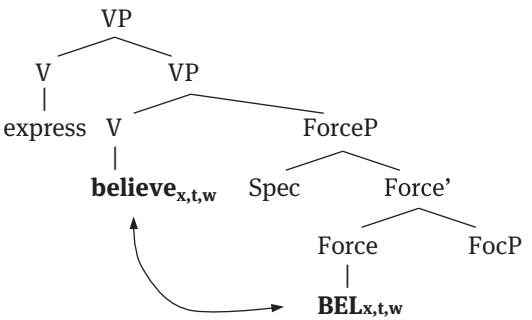
(60) a. x denies p ≈ x expresses that x believes that it is not the case that p
b. x wants p ≈ x believes that x is better off if p than if not p.
(based on Stalnaker 1984 and Heim 1992)
c. it is possible that p

We can now separate the two classes in terms of a requirement of the embedded V2-clause. This is formulated in (61), on the assumption that an embedded V2-clause is represented as a ForceP headed by $BEL_{x,t,w}$.

(61) An argument clause ForceP headed by $BEL_{x,t,w}$ requires embedding immediately under belief.

Thus, we schematically connect the speaker-anchoring in Force in terms of $BEL_{x,t,w}$ to the meaning structure of the higher verb as shown in (62) for the verb *sagen* 'say'. For demonstration purposes, we here project the decomposition of the verbal meanings into the syntax, assuming that the verb's belief-component heads a separate VP in a VP-shell-structure. The arrow highlights the connection between the BEL specification in the Force head and the belief-component at the lower end of the verb's meaning, which is required by $BEL_{x,t,w}$ in Force.

(62)



While the formal nature of this connection is ultimately important, it is left open here. The relation is discussed (without the specific belief-components) in terms of *absorption* by Gärtner (2002). It is approached (also not yet using beliefs specifically) in terms of a presupposition in Truckenbrodt (2006a, b). A presuppositional analysis that uses beliefs specifically is sketched in Sode and Truckenbrodt (2018).

Other possible formal approaches to this relation could involve an uninterpreted $BEL_{x,t,w}$ in Force that depends on an interpreted counterpart in the matrix verb, leaning on suggestions involving the agree-relation (Chomsky 2000, 2001,

2008, Adger 2003, Pesetsky and Torrego 2007, Zeijlstra 2012, Wurmbrand 2014, and many others) or on feature-transmission under binding (Heim (2008)).

Further conceivable analyses are opened up by the neo-Davidsonian approaches of Kratzer (2006), Moulton (2009, 2015), and Elliott (2017), which represent complement clauses as semantic modifiers of verbs and of nouns. In analyses of this kind, the doxastic (belief-related) interpretation could primarily rest on $BEL_{x,t,w}$ in (62) and not be part of the meaning of the matrix verb to begin with.

In summary, Sode and Truckenbrodt (2018) represent Haegeman's speaker-anchoring in typical root clauses in terms of $BEL_{x,t,w}$ in Force. Embedded V2-clauses in complement position provide evidence for an element like $BEL_{x,t,w}$ that requires (semantic or syntactic) embedding directly underneath belief.

3.3 The distinction between root clauses with V2 and verb-final root clauses

We now turn to the distinction between root clauses with V-to-C movement and V-final root clauses in German.

V-final root-clauses in German include appositive relatives and peripheral adverbial clauses. The peripheral adverbial clauses are investigated in detail in Haegeman (2003, 2004a, b) and, for German, Frey (2011, 2012); see also Reis (2006). For appositive relatives, see Hooper and Thompson (1973), Safir (1986), Stowell (2005), and Schlenker (2015).

V2 root clauses include regular declaratives as well as V2 clauses in complement position to assertive-like verbs. However, there are also adjunct V2 clauses: causal adverbial clauses introduced by *denn*, or (colloquially) by *weil*, and V2 relative clauses. The adverbial clauses were discussed early on by Wechsler (1991) for Swedish and for German by Wegener (1993), Uhmann (1998), Scheffler (2005), Heycock (2006), Holler (2008), Antomo and Steinbach (2010), and Reis (2013). V2 relative clauses were investigated in detail in Gärtner (2000).

The distinction of interest here occurs in adjunct clauses. V-final root clauses can occur initially or medially inside of their host clause. V2 root clauses, on the other hand, must follow their host clause. Thus, as shown by Frey (2011), German peripheral adverbial clauses can occur initially in their host clause as in (63a). This contrasts with the inability of V2 adverbial clauses to occur initially in the host clause, as in (63b) (Uhmann 1998, Gärtner 2000). Such a V2 adjunct clause needs to follow its host clause, as in (63c).

(63) a. [Obwohl Hans lange im Urlaub war], wirkt er nicht erholt.
although Hans long on holiday was appears he not recovered

b. * [Denn [sie **hatte** Zeit]], nahm sie den Vorschlag an.
since she had time accepted she the suggestion PRT

c. Sie nahm den Vorschlag an, [denn [sie **hatte** Zeit]].
she accepted the suggestion PRT since she had time
'See accepted the suggestion, since he had time.'

Similarly, V-final appositive relatives regularly occur without extraposition, as in (64a). By contrast, a V2 relative clause does not have the clause-internal option, as was shown by Gärtner (2000) and as is illustrated in (64b). The V2 relative clause must occur following the main clause, as in (64c).[8]

(64) a. Gestern habe ich Peter, [der aus Rosenheim kommt], getroffen.
yesterday have I Peter who from Rosenheim comes met
'Yesterday I met Peter, who comes from Rosenheim.'

b. *Gestern habe ich jemanden, [der **kommt** aus
yesterday have I someone who comes from
Rosenheim], getroffen.
Rosenheim met

c. Gestern habe ich jemanden getroffen, [der **kommt**
yesterday have I someone met who comes
aus Rosenheim].
from Rosenheim
'Yesterday I met someone who comes from Rosenheim.'

We account for this in terms of extensions of Sode and Truckenbrodt (2018), developed in the following.

In Sode and Truckenbrodt (2018), the Force-head $\text{BEL}_{x,t,w}$ is syntactically represented as an index with features. The value of the index is the anchor <x,t,w>. The current BEL is the value of a feature on this index. An additional feature relates the anchor to the context of speech (Kaplan 1989). We will continue to

8 While we think that the adjunct V2-clauses support our point nicely, we are not sure how strong the argument from V2 relative clauses is. Gärtner (2000) gives good reasons for his analysis in which these V2 relative clauses, though showing interactions with the indefinite DPs that they can modify, do not originate in (or next to) these DP. Thus, they might simply be banned from clause-internal position because they have no reason to be there. Assuming that, the examples nevertheless show that V2 relative clauses conform to the generalization that the V2 adjunct clauses give rise to.

use the notation $\text{BEL}_{x,t,w}$, but (reflecting the underlying assumptions of Sode and Truckenbrodt) we will speak of it as an index with features.

We postulate two versions of the earlier $\text{BEL}_{x,t,w}$. First, $\textsc{bel}_{x,t,w}$ (in small-caps) is formally an index with features that has the properties of a personal pronoun: It can find a value in the context and is not subject to strict locality restrictions. It thus requires a contextual antecedent, but once it has that, the value of the anchor is identified and the feature values are set. We now distinguish this from $\text{BEL}_{x,t,w}$. For this, we postulate that it needs to have its features and its anchor value identified by local grammatical interactions.

(65) a. $\textsc{bel}_{x,t,w}$ is pronominal: it gets its anchor and feature values from an antecedent in the (linguistic or extra-linguistic) context.
b. $\text{BEL}_{x,t,w}$ must get its feature values and anchor identification from local grammatical interactions.

The first relevant grammatical interaction is the attraction of V-to-C movement.

(66) a. $\textsc{bel}_{x,t,w}$ does not agree with, or attract, a finite verb.
b. $\text{BEL}_{x,t,w}$ agrees with, and attracts, a finite verb. The effect of this is the valuation of the features of $\text{BEL}_{x,t,w}$, as described in Sode and Truckenbrodt (2018).

Thus $\textsc{bel}_{x,t,w}$ is our representation of the Force-head of V-final root clauses. $\text{BEL}_{x,t,w}$ is our representation of the Force-head of root-clauses that attract V-to-C. $\text{BEL}_{x,t,w}$ in Force attracts the finite verb to Force. As spelled out in detail in Sode and Truckenbrodt 2018, this featural relation can be filled with substance: The features also cross-classify central verbal mood distinctions, which are interpreted in Force when attracted to Force but are subject to other licensing mechanisms when not moved to Force. The reader is referred to Sode and Truckenbrodt (2018) for details.

The second relevant grammatical interaction relates to the identification of the anchor.

(67) a. The anchor of $\textsc{bel}_{x,t,w}$ is identified in the context.
b. The anchor of $\text{BEL}_{x,t,w}$ must be identified by a local grammatical interaction.

Consider first V-final root clauses. Harris and Potts (2009) studied the attributions of appositive relative clauses, nominal appositions, and epithets. Of particular interest to us are the appositive relative clauses, which are root clauses. Harris

and Potts (2009) argue for all three kinds of supplements that they can be attributed to the speaker or to the referent of a c-commanding DP in the structure or to a different salient individual. Harris and Potts (2009) view this as the attribution of a *commitment* to this attitude holder.

We think that this carries over to appositive relatives and other V-final root clauses in German. We illustrate this in (68) with appositive relatives, using verbal mood and sentence adverbs for cueing different relevant readings.

(68) a. Maria sagte, dass Saskia, die übrigens aus Rosenheim
Maria said that Saskia who by.the.way from Rosenheim
kommt, sehr nett sei.
comes.IND very nice is KONJI
'Maria said that Saskia, who is from Rosenheim, by the way, is very nice.'
(Salient reading: the speaker maintains that Saskia is from Rosenheim.)

b. Maria sagte, dass Saskia, die aus Rosenheim komme,
Maria said that Saskia who from Rosenheim comes.KONJI
sehr nett sei.
very nice is.KONJI
'Maria$_1$ said that Saskia, who is from Rosenheim (she$_1$ said),
is very nice.'
(Maria said that Saskia is from Rosenheim.)

c. Maria sagte, dass Saskia, die angeblich aus
Maria said that Saskia who allegedly from
Rosenheim kommt, sehr nett sei.
Rosenheim comes.IND very nice is.KONJI
'Maria said that Saskia, who is allegedly from Rosenheim, is very nice.'
(Others than the speaker or Maria claim that Saskia is from Rosenheim.)

This flexibility is now captured by (67a): V-final root clauses like the appositive relatives, have a head $\text{BEL}_{x,t,w}$, which finds the value for its anchor in the context.

We address the effects of (67b) in the following section.

3.4 ASS and the analysis of declarative and adjunct V2 root clauses

Our (67b) builds on an idea in the architecture of Krifka (2015): the identification of the anchor of elements like our $\text{BEL}_{x,t,w}$ can play a grammatical role.

We maintain that local identification of the anchor of $\text{BEL}_{x,t,w}$ is possible in the configuration (62), where the matrix clause contains the information relevant to this anchor: x is the referent of the matrix subject and t and w are coordinates of the belief component of the matrix verb. Putting details aside, we suggest:

(69) The anchor of $\text{BEL}_{x,t,w}$ can be locally identified in the configuration in (62).

Here our analysis of the anchor of $\text{BEL}_{x,t,w}$, has parallels to the analysis of PRO in von Stechow (2004). It is locally bound (here: identified) by a structurally adjacent attitude verb.

We turn to the identification of the anchor of V2 clauses that are declaratives or V2 adjunct clauses. For these, we adopt additional elements of the theory of Krifka (2015). Krifka employs a commitment phrase CmP in the left periphery, which we see as close to our Force-projection headed by $\text{BEL}_{x,t,w}$ (see footnote 5). Krifka employs an additional higher projection, the speech act projection ActP. For Krifka, the ActP distinguishes between assertions and questions and supplies a value to the anchor of the lower CmP. These are properties that we adopt, in a specific form discussed below.

Since we follow Haegeman (2003, 2004a,b) in assuming that ForceP is in principle optional (present only in root-clauses), we also take ActP to be in principle optional. Differing from Krifka, we take the target of V-to-C to be Force, rather than Act. This is because complement V2-clauses have a ForceP but no ActP in our analysis, as in (62). However, we postulate that ActP can be added when necessary. We take it to be necessary when there is no other way of identifying the anchor of ForceP. We postulate an assertive head of ActP: $\text{ASS}_{x,t,w}$. We take this to be pronominal like $\text{BEL}_{x,t,w}$, picking up its anchor in the context. As the head of an ActP, $\text{ASS}_{x,t,w}$ can thus be added on top of the ForceP. This is shown for a declarative in (70).

(70) $\text{ASS}_{S,t,w}$ [Die Sonne [$\text{BEL}_{S,t,w}$]-**hat** geschienen.]
the sun has shone
'The sun shone.'

In this configuration, $\text{ASS}_{S,t,w}$ is in the same local relation to $\text{BEL}_{x,t,w}$ as "believe" is to BEL in (62). We thus assume that the anchor of $\text{BEL}_{x,t,w}$ can also be locally identified as the anchor of $\text{ASS}_{x,t,w}$.

(71) $\text{ASS}_{x,t,w}$ can be added on top of ForceP as the head of an ActP. The anchor of a $\text{BEL}_{x,t,w}$-head of the ForceP can then be locally identified with the anchor of $\text{ASS}_{x,t,w}$.

Support for the presence of a pronominal element like $\text{ASS}_{x,t,w}$ in declaratives comes from the cases of unembedded reported speech in V2-clauses like (44), repeated here as (72) with annotations added.

(72) Peter war zufrieden. $\text{ASS}_{P,t,w}$ Maria $\text{BEL}_{P,t,w}$-habe seinen
Peter was content. Maria has.KONJI his
Vorschlag angenommen.
suggestion accepted
'Peter was content. *He said that* Maria accepted his suggestion.'

The pronominal $\text{ASS}_{x,t,w}$ here needs to be bound to a contextual antecedent, which in (72) is the perspective of Peter. Where it finds one, as in (72), it is fine. Where it does not, as in (45), infelicity results.

We now attribute the property of interest that crucially distinguishes V2 root clauses from V-final root clauses to $\text{ASS}_{x,t,w}$ as in (73).[9]

(73) An ActP headed by $\text{ASS}_{x,t,w}$ must follow its host clause, where it has one.

We illustrate the account. A representation with a V2 host clause and an appositive relative clause is shown in (74). $\text{BEL}_{x,t,w}$ in the appositive has its anchor identified by its being a pronoun, thus does not require $\text{ASS}_{x,t,w}$ for this identification, and thus need not follow its host-clause.

(74) $\text{ASS}_{S,t,w}$ Gestern $\text{BEL}_{S,t,w}$-**habe** ich Peter,
yesterday have I Peter
[der $\text{BEL}_{S,t,w}$ aus Rosenheim kommt], getroffen.
who from Rosenheim comes met

A representation of an adjunct V2-clause is shown in (75). $\text{ASS}_{x,t,w}$ is required for the identification of the anchor of $\text{BEL}_{x,t,w}$, and this forces the adjunct V2-clause to follow its host clause.

(75) Sie nahm den Vorschlag an, [$\text{ASS}_{S,t,w}$-denn sie $\text{BEL}_{S,t,w}$-**hatte** Zeit].
she accepted the suggestion PRT since she had time
'She accepted the suggestion, since she had time.'

9 Complement V2 clauses have also been argued to follow their host clause (Reis 1997). In the current account, this does not fall under (73). We point out that these might be separate but related issues, related to precedence-restrictions of $\text{ASS}_{x,t,w}$ and $\text{BEL}_{x,t,w}$ (though not $\text{BEL}_{x,t,w}$).

The account here converges with the analysis of Antomo and Steinbach (2010), in which declaratives and adverbial V2 clauses (for them, *weil*-V2 clauses) share the same epistemic speech-act related elements in the left periphery (here: $\text{ASS}_{x,t,w}$ and $\text{BEL}_{x,t,w}$).

In the specific account here, the conjunction *denn* 'since', which precedes V2-clauses, can be taken to be an overt lexical head of ActP:

(76) Lexical head of category Act: [$\text{ASS}_{x,t,w}$, *denn*]

Some further support for $\text{ASS}_{x,t,w}$ is that it seems to add an assertive meaning that goes beyond belief. Recall first that the restrictions on embedded V2, which led us to (62), are a good reason to attribute a *belief*-related meaning ($\text{BEL}_{x,t,w}$) to the Force-head, rather than the meaning of *saying*. This is because belief, but not saying, seems to be contained in the root-clause embedding verbs (here: *say*, *believe*, *dream*) in the relevant way. However, $\text{ASS}_{x,t,w}$ seems to have the slightly stronger meaning of *saying*, i.e. expressing a belief. As observed by Reis (1997), unembedded V2-declaratives which are attributed to another person due to their Konjunktiv morphology, have to resume what someone *said*, as in (77). They cannot resume what someone *believes*, as shown in (78). See also Fabricius-Hansen and Sæbø (2004).

(77) Peter sagt, er **sei** unfair behandelt worden. Er **habe**
Peter says, he is.KONJI unfairly treated been he has.KONJI
nichts bekommen.
nothing got
'Peter says, that he was treated unfairly. *He says that* he didn't get anything.'

(78) Peter glaubt, er **sei** unfair behandelt worden. ?Er
Peter believes, he is.KONJI unfairly treated been he
habe nichts bekommen.
has.KONJI nothing got
'Peter believes, that he was treated unfairly. *He ?says/*believes that* he didn't get anything.'

In Sode (2014), this effect is attributed to the sentence form, rather than to the licensing of Konjunktiv in indirect speech (for which belief is likewise sufficient). This attribution is refined here. Since it is arguably not an effect of $\text{BEL}_{x,t,w}$ in C, it is plausibly attributed to $\text{ASS}_{x,t,w}$. The analysis of the second sentence of (78) is shown in (79). $\text{ASS}_{x,t,w}$ is added for the identification of the anchor of $\text{BEL}_{x,t,w}$. We interpret $\text{ASS}_{x,t,w}$ as in (80) in terms of saying, i.e. expressed beliefs. With this, the interpretation of (79) is that Peter *says* that he did not get anything.

(79) $\text{ASS}_{\text{Peter,t,w}}$ [$_{\text{ForceP}}$ er [$\text{BEL}_{\text{Peter,t,w}}$]-**habe** nichts bekommen]
he has KONJI nothing got

(80) $\text{ASS}_{\text{x,t,w}}$(p): x expresses at t in w that x believes p.[10]

Summing up this section, we adopt the ActP of Krifka (2015), for us on top of the ForceP and in principle optional like the ForceP. The relevant Act head for our discussion is $\text{ASS}_{\text{x,t,w}}$. It can be required by V-to-C-triggering $\text{BEL}_{\text{x,t,w}}$ in Force for identifying the anchor of $\text{BEL}_{\text{x,t,w}}$. There is motivation for its pronominal nature and motivation for an assertive interpretation that goes beyond what comes from $\text{BEL}_{\text{x,t,w}}$. We hold the presence of $\text{ASS}_{\text{x,t,w}}$ responsible for the requirement of V2 adjunct clauses to follow their host clause.

4 The account of parentheticals

In this section, we develop an account of the two kinds of parentheticals in terms of the analytical devices developed in Section 3. We begin with a first analysis in Section 4.1, which is extended in Section 4.2. In the end, we reach a partial rationale for why V-final parentheticals (*as*-parentheticals) do not require a root clause host, while German V-in-C parentheticals (bare parentheticals) do.

4.1 A first analysis

We begin by updating the representations in (55) and (56). The operator of the parenthetical is defined in terms of $\text{BEL}_{\text{x,t,w}}$.

(81) host clause bare parenthetical
[$_{\text{ForceP}}$ $\text{BEL}_{\text{M,t,w}}$ it's raining] [[$_{\text{ForceP}}$ $\text{BEL}_{\text{M,t,w}}$ Op]$_1$ Mary said [$_{\text{ForceP}}$ $\text{BEL}_{\text{M,t,w}}$ Op]$_1$]

(82) host clause *as*-parenthetical
... it's raining [Op_1 as Mary said [$_{\text{ForceP}}$ $\text{BEL}_{\text{M,t,w}}$ Op_1]]

10 It seems sensible to us to conceptualize the highest grammatical elements of such a speech-act related representation as conventional implicatures, as argued by Gutzmann (2015). We agree with Gutzmann that they cannot be regular content. An alternative we would currently not rule out is that they are presupposition that are accommodated; see Schlenker (2007) and Truckenbrodt (2012) in this connection.

We turn to the left periphery of the parentheticals. Both kinds of parentheticals are themselves root clauses. For example, they can themselves host a bare parenthetical:

(83) a. Frogs have souls, Osbert feels, I realize. (Ross 1973: 136)
b. Es regnet, wie Maria (glaube ich) weiß.
it rains as Maria believe I knows
'It is raining, as Maria knows (I think).'

For *as*-parentheticals, which are V-final in German, we thus employ a complementizer that includes $\text{BEL}_{x,t,w}$ in (84a). We assume that this complementizer agrees with, and attracts, an empty operator that need not be a ForceP. Somewhat informally, we write this as agree with, and attraction of a propositional operator Op in (84a). This leads to the structure shown in (84b), where "___" marks the landing-site of the operator Op. The moving operator is shown before movement and underlined.

(84) a. Lexical head of *wie*-parenthetical
$[_{\text{Force}}$ wie, $\text{BEL}_{x,t,w}]$, agreeing with, and attracting to its specifier, a propositional operator Op.
b. $[_{\text{ForceP}}$ ___ wie-$\text{BEL}_{S,t,w}$ Maria sagt $[_{\text{ForceP}}$ $\text{BEL}_{M,t,w}$ Op$]]$
as Maria says

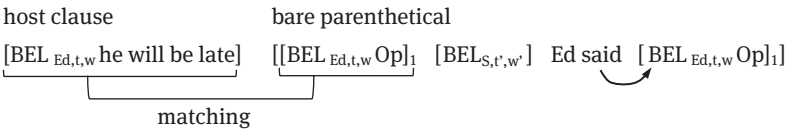
We turn to the analysis of bare parentheticals, i.e. V1-parentheticals in German. $\text{BEL}_{x,t,w}$ in the Force-head of the V1-parenthetical attracts the finite verb. In addition, a ForceP operator is attracted to the specifier position. This is required by (85a). A structure is shown in (85b), again before operator movement and with the operator that will move underlined.

(85) a. Lexical head of bare parentheticals (preliminary)
$[_{\text{Force}}$ $\text{BEL}_{x,t,w}]$, agreeing with, and attracting to its specifier, $[_{\text{ForceP}}$ Force Op$]$
b. $[_{\text{ForceP}}$ ___ $\text{BEL}_{S,t,w}$-**hat** Maria gesagt $[_{\text{ForceP}}$ $\text{BEL}_{M,t',w'}$ Op$]]$
has Maria said

We put the issue of the identification of the anchor of BEL (and the possible presence of $\text{ASS}_{x,t,w}$) aside for the moment. We return to it in the following section. For now, we complete our first analysis by postulating a matching process relating the operator of the bare parenthetical and the host clause, which is illustrated in (86). We assume that matching includes matching the Force heads of the matching constituents, i.e. matching the $\text{BEL}_{Ed,t,w}$ of the operator with the $\text{BEL}_{Ed,t,w}$ of the

host clause. We assume that $BEL_{Ed,t,w}$ of the operator can be matched either with $BEL_{Ed,t,w}$ or with $\textsc{bel}_{Ed,t,w}$, i.e. both V-in-C root clauses and V-final root clauses can host a bare parenthetical (see sections 1.4 and 1.5). We further allow that (in standard cases) the matching process identifies the propositional Op in the complex operator with the content of the host clause – in the example, with the content of *he will be late*. In this way, the parenthetical adds *Ed said he will be late*.

(86)



With this, consider the arrow in (86) that connects the parenthetical verb to $BEL_{Ed,t,w}$. This is parallel to the interaction in (62): The parenthetical verb plays a crucial role in the interpretation of $BEL_{Ed,t,w}$. At the same time, the arrow also resumes our rendition of Bolinger's idea in (41): The parenthetical restricts a silent representation in the left periphery of the host clause. In (86), this interaction is indirect. Thus, as the arrow in (86) indicates, the parenthetical locally interacts with $BEL_{Ed,t,w}$ in the embedded copy of the host clause. This $BEL_{Ed,t,w}$, however, is now related to the $BEL_{Ed,t,w}$ in the left periphery of the host clause on the left in (86). The relation is mediated by movement of the operator [$BEL_{Ed,t,w}$ Op] inside of the parenthetical and by matching of this operator to the host clause. In this way, an important part of Bolinger's idea is preserved in the current account. Bolinger's formulation of "modulation" is refined in terms of the belief-related representations. Further, the contrast between (46) and (47) is still captured in the way that was sketched in (48): Bare parentheticals identify the anchor of the Force head $BEL_{x,t,w}$ of their host clause by the mechanisms assumed here, while *as*-parentheticals do not.

4.2 The anchors of $BEL_{x,t,w}$ in bare parentheticals: a refined analysis

We now turn to the issue of the identification of the anchor of $BEL_{S,t',w'}$, the head of the bare parenthetical, in (86). How is it identified? We expect the addition of $\textsc{ass}_{x,t,w}$ on top of the parenthetical for this purpose. Interestingly, however, bare parentheticals are untypical V-in-C adjunct clauses. They show evidence for the absence of $\textsc{ass}_{x,t,w}$. Bare parentheticals do not need to follow their host clause. Instead, they can, and often will, occur inside of their host clause. This is clear where they occur medially following C as in (87). In addition, Reis (1995a, b) and Pittner

(1995) argued that sentences of the form in (88) also involve V1-parentheticals (rather than a matrix clause and long-distance extraction).

(87) Sie hatte damals, *sagte sie*, keine Zeit für solche Dinge.
she had.IND then said she no time for such things
'Back then she did not have time for things like that, she said.'

(88) Am Dienstag, *sagte Peter*, habe er keine Zeit.
on Tuesday said Peter has.KONJI he no time
'On Tuesday he wouldn't have time, said Peter.'

Given the account above, this suggests that bare parentheticals have a different way of identifying the anchor of their Force-head $\text{BEL}_{x,t,w}$. They do not require $\text{ASS}_{x,t,w}$ for this. The obvious place to look for this different mechanism is in connection with their specifier, since this contains an empty ForceP that is also headed by BEL. However, these two instances of BEL will often carry different anchors.[11] This is illustrated in (89), where $\text{ASS}_{x,t,w}$ is omitted for the main clause and the anchors on BEL are simplified to either S (for speaker) or M (for Maria). The initial main clause is here a clause in Konjunktiv from the perspective of Maria. It is matched to the operator $[\text{BEL}_{\text{M}}\ \text{Op}]_1$ in Spec,ForceP of the following parenthetical (underlined). We are interested in formal relations of this operator to the following Force head of the bare parenthetical (likewise underlined). In (89), this second underlined instance of BEL is a semantically different one. It represents that the content of the parenthetical is attributed to the speaker.

(89) [es BEL_{M}-habe geregnet]
it has.KONJI rained
$[[\underline{\text{BEL}_{\mathbf{M}}\ \text{Op}}]_1$ $\underline{\text{BEL}_{\mathbf{S}}}$-hat Maria gesagt $[\text{BEL}_{\text{M}}\ \text{Op}]_1]$
has.IND Maria said

However, it is possible to construe a connection with semantic content between the two. For explaining this, we first back up a bit.

If we represent a shifted interpretation of a clause, like the initial main clause in (89), there are two relevant ways of representing the shift. First, it could be that only the local perspective is represented, here the perspective of Maria. This is

11 They will carry the same anchor only in 1st person parentheticals like *glaube ich* ‚I believe' and in the evidential reading (27), which we take to be marginal in German.

the assumption made in Sode and Truckenbrodt (2018) and in the current paper up to here. In (89), this is represented by BEL_{M}. The second candidate contains more information: It would also represent that Maria's perspective is as seen from the perspective of the speaker. Instead of BEL_{M} we would have a stacked representation like $\text{BEL}_{\text{S}}[\text{BEL}_{\text{M}}]$, intuitively 'what the speaker believes that Maria believes'. The more informative version would be a grammatical representation of the notion of a *derived context* in Stalnaker (1988). An empirical argument for the presence of such a more informative representation is given in Trinh and Truckenbrodt (2018). In the following, we show that the more informative representation also leads to a more interesting analysis of bare parentheticals. We thus assume:

(90) Legitimate Force heads using BEL/BEL, where "S" is here short for the context of Kaplan (1989), i.e. <speaker, time of speech, world of the utterance>, and X and Y are other anchors:

BEL_{S}	BEL_{S}
$\text{BEL}_{\text{S}}[\text{BEL}_{\text{X}}]$	$\text{BEL}_{\text{S}}[\text{BEL}_{\text{X}}]$
$\text{BEL}_{\text{S}}[\text{BEL}_{\text{X}}[\text{BEL}_{\text{Y}}]$	$\text{BEL}_{\text{S}}[\text{BEL}_{\text{X}}[\text{BEL}_{\text{Y}}]]$
etc.	

Thus, each head must begin with anchoring to the speech context, and pronominal BEL occurs except possibly for the lowest segment, which may be BEL. If it is BEL, we still have the requirements on it defined for BEL above.

With that, we have (91) instead of (89).

(91)

[es BEL_{S} $[\text{BEL}_{\text{M}}]$-habe		geregnet]			
it	has.KONJI	rained			
$[\underline{\text{BEL}_{\text{S}}}\ [\text{BEL}_{\text{M}}]\ \text{Op}]_1$	$\underline{\text{BEL}_{\text{S}}}$-hat	Maria	gesagt	$[\text{BEL}_{\text{S}}\ [\text{BEL}_{\text{M}}]\ \text{Op}]_1$	
	has.IND	Maria	said		

As highlighted by the added line in (91), there is now co-anchoring for S among the operator in the specifier and the head of the bare parenthetical.

An improved lexical entry of the head of bare parentheticals is then as in (92), revised from (85a).

(92) Lexical head of bare parentheticals (final)
$[_{\text{Force}}\ \text{BEL}_{\alpha}]$, agreeing with, and attracting to its specifier, a projection headed by $\text{bel}_{\alpha}[\ldots]$ or BEL_{α}.

The crucial part of the derivation of the parenthetical in (91) is shown separately in (93). Before agree and attraction, the representation is as in (93a), with

an un-identified anchor of BEL_X, the head of the bare parenthetical. Agree and attraction of the empty ForceP specifier via (92) then allow the identification of the anchor of this BEL_X with the upper segment of the parenthetical operator head $[\underline{\text{BEL}_S}[\underline{\text{BEL}_M}]\ \text{Op}]_1$, as shown in (93b).

(93) a. ____ $\underline{\text{BEL}_X}$-hat Maria gesagt $[\text{BEL}_S[\text{BEL}_M]\ \text{Op}]$
has.IND Maria said

b. $[\underline{\text{BEL}_S}[\underline{\text{BEL}_M}]\ \text{Op}]_1$ $\underline{\text{BEL}_S}$-hat Maria gesagt $[\text{BEL}_S[\text{BEL}_M]\ \text{Op}]_1$
has.IND Maria said

This, then, is the core of our analysis of bare parentheticals: The lexical head of the bare parenthetical in (92) is an instance of $\text{BEL}_{x,t,w}$ with a special lexical provision for the identification of its anchor: It attracts an operator headed by another $\text{BEL}_{x,t,w}[\ldots]$/$\text{BEL}_{x,t,w}$ to its specifier and identifies its anchor with a BEL/BEL-segment of this operator head. This is why it requires a root-clause host. The operator headed by BEL/BEL must then be matched against a root clause host, i.e. a host clause that is likewise headed by BEL/BEL. Evidence for this special way of anchor-identification in (92) is that bare parentheticals need not carry $\text{ASS}_{x,t,w}$, i.e. need not follow their host clause.

With this, we have arrived at an account in which the form of the two parentheticals is related to their different host-clause requirements. The V1-parentheticals are headed by $\text{BEL}_{x,t,w}$, which requires grammatical mechanisms for identifying its features and its anchor. Its features are identified by V-to-C movement. The requirement of anchor-identification underlies the attraction of a BEL/BEL-headed specifier, which leads to the requirement of a root clause host. By contrast, the *wie*-parentheticals are V-final, and are thus headed by the pronominal $\text{BEL}_{x,t,w}$. It has its anchor and features identified in connection with its (not necessarily local) antecedent. It therefore does not induce V-to-C movement and it does not require identification of its anchor by a grammatical mechanism. It thus has no motivation for attracting a specifier headed by BEL/BEL, and thus for having a root clause host.

5 Summary

Bare parentheticals (in German: V1-parentheticals) require a host clause that is a root clause (Hooper and Thompson 1973, Steinbach 2007). *As*-parentheticals (in German introduced by *wie* 'as') do not require a root clause host, and can even have subclausal constituents as their host (Pittner 1995, Potts 2002).

Haegeman (2003, 2004a,b) analyzes root clauses as ForcePs with speaker-anchoring in Force. The speaker-anchoring is analyzed in Sode and Truckenbrodt (2018) in terms of the Force-heads $\text{BEL}_{x,t,w}$ and $\text{WANT}_{x,t,w}$. These are building blocks of our analysis, with the following suggestions.

Both parentheticals have an empty root clause [$\text{BEL}_{x,t,w}$ Op] as the complement of the parenthetical verb. This has the correct consequence that both kinds of parentheticals allow only root-clause embedding verbs as parenthetical verbs.

In bare parentheticals, the parenthetical head attracts the operator [$\text{BEL}_{x,t,w}$ Op] to its specifier, which requires a matching root clause host with an identical $\text{BEL}_{x,t,w}$ head. In *as*-parentheticals, the parenthetical head attracts only Op. Its host constituent therefore does not need to be a root clause.

A more detailed analysis employs an extension of Sode and Truckenbrodt (2018). V-final root clauses are headed by $\textsc{bel}_{x,t,w}$, while root clauses with V-to-C are headed by $\text{BEL}_{x,t,w}$. The latter requires that its anchor and its features are identified by local grammatical interactions. V-to-C movement occurs for valuation of its features (Sode and Truckenbrodt 2018). In V1-parentheticals, the anchor of the parenthetical head $\text{BEL}_{x,t,w}$ is identified by attraction of [$\text{BEL}_{x,t,w}$ Op] to its specifier. On the other hand, $\textsc{bel}_{x,t,w}$ is pronominal, receives its values from its antecedent in the context, and does not induce such grammatical interactions. It does not attract V-to-C. As the head of V-final *wie*-parentheticals, $\textsc{bel}_{x,t,w}$ does not attract [$\text{BEL}_{x,t,w}$ Op] but only Op, since its anchor need not be identified by a grammatical interaction.

The account employs an additional element $\textsc{ass}_{x,t,w}$ that can be added as the head of an ActP (Krifka 2015) on top of the ForceP. It is deployed to identify the anchor of $\text{BEL}_{x,t,w}$ where necessary (in V2 declaratives, V2 adverbial clauses and V2 relative clauses) and has the consequence that the ActP must follow its host clause if it has one.

The account of bare parentheticals also supports a more complex representation of Force-heads (Trinh and Truckenbrodt 2018). A Force-head that represents Maria's perspective is not just BEL_{M} but [$\textsc{bel}_{S}$[BEL_{M}]], intuitively 'what the speaker takes to be Maria's beliefs' (Stalnaker 1988).

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Antonios Tsiknakis

Verb movement and topicalization in German

Abstract: This paper deals with the contribution of finite verb movement and topicalization to the meaning (*sentence mood*) of declarative and interrogative clause types in German. Assuming a CP/IP clause structure, I will argue that verb movement to C is triggered by a clause type feature [F1] which relates the descriptive content of the clause to the common information represented in a doxastic conversational background of the discourse context. Relying on the concept of *decidedness* from Farkas (2003) and the related concept of *openness*, I will claim that [F1] presupposes that the descriptive content of the clause is *undecided*/*open* relative to the relevant conversational background in the given context and that it is supposed to become *decided/closed* relative to the relevant background in a future context following the context which is projected through the anchoring of the clause in the given context. I will also argue that topicalization is triggered by a feature [F2] which modifies the interpretation of [F1] such that the combination of [F1] and [F2] presupposes that the descriptive content is undecided relative to the relevant conversational background of the given context and that it is supposed to become *positively decided* relative to that background in the context which is projected through the anchoring of the clause. The proposed theory maintains a balanced position between a maximalist approach to sentence mood presented in Altmann (1987, 1993) and a minimalist approach presented in Portner (2005). It also shows how the use potential of the discussed clause types in German can be derived from the interpretation of the involved linguistic means in a compositional manner.

1 Introduction

This paper is about the function of the indicative finite verb movement to C position (*V-to-C movement*) in the German clause types (1a)–(1c) and the positioning of a non-relative [–wh]-phrase in the SpecC position (*topicalization*), which can be seen in the clause type (1c):

Antonios Tsiknakis, University of Wuppertal

https://doi.org/10.1515/9781501508141-013

		SpecC	C				clause type
(1)	a.		$Liebt_1$	Maria	Peter	t_1?	V1-y/n-interrogative
			loves	Maria	Peter		
	b.	Wen_2	$liebt_1$	Maria	t_2	t_1?	V2-wh-interrogative
		who.ACC	loves	Maria			
	c.	$Maria_2$	$liebt_1$	t_2	Peter	t_1.	V2-declarative
		Maria	loves		Peter		

I will propose that V-to-C movement in the clause types (1a)–(1c) is triggered by an interpretable clause type feature [F1] which is located in the C position. Analogously, topicalization in the clause type (1c) will be associated with an interpretable feature [F2] located in the same position. The interpretation of the proposed features will be derived by a comparison of the use potential of the clause types in (1) with their corresponding counterparts in (2), in which neither V-to-C movement nor topicalization takes place and will be modeled in a framework of dynamic semantics which represents the common information of the discourse participants in (embedded) *context sets*, or in other words *conversational backgrounds* which are continuously updated during the conversation (cf. Stalnaker 1978, Farkas 2003, Roberts 2012):

		SpecC	C				clause type
(2)	a.		ob	Maria	Peter	liebt	V-final y/n-interrogative
			whether	Maria	Peter	loves	
	b.	wen_2		Maria	t_2	liebt	V-final wh-interrogative
		who.ACC		Maria		loves	
	c.		dass	Maria	Peter	liebt	V-final that-clause
			that	Maria	Peter	loves	

I will claim that the interpretation of [F1] and [F2] determines the set of prototypical discourse or linguistic environments in which the descriptive content of the relevant clause types can be properly anchored. Relying on the concept of *decidedness* from Farkas (2003), I will define the related concept of *openness* and will argue that [F1] restricts the anchoring potential of a clause to environments in which its descriptive content is *undecided/open* relative to a (embedded) doxastic conversational background of a given context and is supposed to become *(positively) decided* relative to that background. The presence of [F2] will be claimed to regulate whether the update operation initiated by [F1] is supposed to be completed directly in the output context which is projected through the anchoring of the clause in the given context or indirectly in a context following the output context of the anchoring (cf. Tsiknakis 2016, 2017).

The operations of V-to-C movement and topicalization are usually considered to contribute to the construction of sentence mood (cf. for example Altmann 1987, 1993, Lohnstein 2000, 2007, 2020). Therefore, Section 2 will start with a discussion of two competing approaches about the sentence mood concept which will build the background of the theory proposed in this paper. Section 2.1 critically looks at the traditional approach represented in Altmann (1987, 1993) according to which sentence moods include an illocutionary predicate encoding the speaker's attitude towards the descriptive content of the clause. Section 2.2 views the minimalist approach represented in Portner (2005) according to which the speaker's attitude is derived from the descriptive content's semantic type.

Section 3 will introduce the basic assumptions and concepts of my own approach, which will be outlined in the sections 4 and 5. Section 4 deals with the interpretation of [F1], which is assumed to provoke verb movement to C and Section 5 looks at the interpretation of [F2], which is said to be responsible for the topicalization of a [–wh]-phrase. Section 6 ends with a discussion of the advantages of the maintained approach in contrast to Altmann's maximalist and Portner's minimalist approach.

2 Two competing approaches to sentence mood

2.1 The maximalist approach: sentence mood as an illocutionary type operator

A clause type is a structure defined by a certain set of formal features. For the definition of clause types in German, the following features are basically relevant (cf. Altmann 1987, 1993, Lohnstein 2000, 2007, 2020):

(3) a. verbal mood
    b. finite verb movement
    c. occupation of SpecC
    d. conjunctions in C

German is an SOV language. From this follows that the construction of the clause types in (1) requires the following operations: First of all, the indicative verb has to be fronted to the C position in the left periphery of the clause. If no other operation takes place, the result is a verb first (V1) y/n-interrogative like in (1a). If a [+wh]-phrase is placed in SpecC additionally, the result is a verb second (V2) wh-interrogative like in (1b) and if a [–wh]-phrase is placed in this position

instead, this leads to a V2-declarative like in (1c). The table in (4) summarizes the construction principles of the relevant clause types and the names used for them in this paper:

(4)

SpecC	C	clause type
—	finite verb	V1-y/n-interrogative
[+wh]	finite verb	V2-wh-interrogative
[–wh]	finite verb	V2-declarative

The counterparts of the clause types in (1) given in (2) show no V-to-C movement. The finite verb stays at the final position of the clause. If the conjunction *ob* ('whether') is inserted in C position instead, this leads to the verb final (V-final) counterpart of the y/n-interrogative (cf. (2a)), inserting the conjunction *dass* ('that') derives the counterpart of the declarative (cf. (2c)) and moving a [+wh]-phrase to SpecC results to the counterpart of the wh-interrogative (cf. (2b)). The table in (5) summarizes the syntactic construction principles and the names for these clause types:

(5)

SpecC	C	clause type
—	*ob*	V-final y/n-interrogative
[+wh]	—	V-final wh-interrogative
—	*dass*	V-final that-clause

According to Altmann (1987, 1993), the formal feature set defining a clause type determines the illocutionary function which is realized by a prototypical utterance of the clause. One way to implement this idea, is to assume that the representation of a clause type meaning (*sentence mood*) forms an ordered pair consisting of a predicate *att* representing the attitude of the speaker towards the descriptive content of the clause φ which is expressed by the prototypical illocutionary act realized by the sentence utterance (cf. Bierwisch 1980, Jacobs 1991):

(6) sentence mood = ⟨att, ϕ⟩

Thus, the meaning of a V2-declarative like (1c) would consist of a descriptive content ϕ and a predicate ASSERT which states that the speaker believes or knows that ϕ is true, while the meaning of an interrogative like (1a) or (1b) would contain a predicate QUEST that expresses in the case of the y/n-interrogative that the speaker does not know whether ϕ is true, or in the case of the [wh]-interrogative, in what respect ϕ is true:

(7)

clause type	sentence mood
declarative	⟨ASSERT, ϕ⟩
interrogative	⟨QUEST, ϕ⟩

This approach meets several problems (cf. Brandt et al. 1992, Reis 1999). To begin with, the verb final clauses in (2) have to be assigned different meanings depending on their usage. Let's consider the V-final y/n-interrogative, for example. This clause type can be used in a root context to realize a monologic question (cf. Truckenbrodt 2006a, 2006b, 2013):

(8) Ich habe Maria seit Jahren nicht gesehen. **Ob sie noch so viel raucht?**
I have Maria since years not seen whether she still so much Smokes
'I have not seen Maria for years. I wonder if she still smokes a lot.'

On the one hand, the V-final y/n-interrogative expresses in a root context like (8) the erotetic attitude of the speaker that he does not know if Maria still smokes a lot. In an approach to sentence mood which involves an illocutionary predicate, this should be represented in the meaning of the clause by the existence of the predicate QUEST. But on the other hand, V-final interrogatives are usually used in non-root position like in the following examples:

(9) a. Fritz fragt Klaus, **ob Maria Peter liebt**.
Fritz asks Klaus whether Maria Peter loves
'Fritz asks Klaus whether Maria loves Peter.'

b. Fritz sagt Klaus, **ob Maria Peter liebt**.
Fritz tells Klaus whether Maria Peter loves
'Fritz tells Klaus whether Maria loves Peter.'

But neither in (9a) nor in (9b), the utterance of the V-final interrogative constitutes an independent speech act in which the speaker expresses that he does not know if Maria loves Peter. Therefore, the illocutionary predicate QUEST should not be part of the clause meaning in those cases.

A similar problem concerns V2-declaratives. They can be used in argument function for example after verbs of believing (cf. (10)) or verbs of saying (cf. (11)) as an alternative to a V-final that-clause (cf. Reis 1997, Romberg 1999, Meinunger 2004, 2006, Antomo 2015):

(10) a. Fritz glaubt, dass Maria Peter liebt.
Fritz believes that Maria Peter loves

b. Fritz glaubt, Maria liebt Peter.
Fritz believes Maria loves Peter
'Fritz believes that Maria loves Peter.'

(11) a. Fritz sagt, dass Maria Peter liebt.
Fritz says that Maria Peter loves

b. Fritz sagt, Maria liebt Peter.
Fritz says Maria loves Peter
'Fritz says that Maria loves Peter.'

As the sequence in (12) shows, the utterances of (10b) and (11b) clearly do not express that the speaker believes the truth of the dependent proposition. Therefore, the assumption that the sentence mood of a V2-declarative includes an illocutionary predicate ASSERT which states that the speaker believes the truth of the proposition expressed by the declarative is implausible:

(12) Fritz glaubt/sagt, Maria liebt Peter. Aber das stimmt nicht.
Fritz believes/says Maria loves Peter. But this is-right not.
Sie liebt Klaus.
She loves Klaus.
'Fritz believes/says that Maria loves Peter. But this is not true.
She loves Klaus.'

Another problem of this sentence mood conception is the usage of V2-declaratives in declarations like for example in (13):

(13) Du bist (hiermit) entlassen.
you are hereby fired

According to Searle (1980), the illocutionary point of a declaration is to bring about the correspondence between the descriptive content of the clause and the reality. Thus, the successful performance of a declaration creates a new fact in the world. In (13), the result of an successful performance would be the fact that the addressee has lost his job. This differs obviously from an assertive speech act in which the existence of the fact described by the proposition is independent from the success of the performance of the speech act. A declaration obviously does not involve a speaker's assertive attitude. The predicate ASSERT in the

representation of the clause type meaning would need to be canceled or reinterpretated in such a case.[1]

Another problem pointed out by Gärtner & Michaelis (2010) concerns the coordination of two V2-declaratives:

(14) a. Maria liebt Peter und Peter liebt Sarah.
Maria loves Peter and Peter loves Sarah

b. Maria liebt Peter oder Peter liebt Sarah.
Maria loves Peter or Peter loves Sarah

The coordination of two V2-declaratives by the conjunction *und* ('and') like in (14a) does not yield to a problem for the illocutionary approach, because the utterance of the clause is compatible with the inference that the speaker believes the truth of the first conjunct and the inference that he believes the truth of the second conjunct, too. But the utterance of (14b), where the two V2-declaratives are coordinated by the conjunction *oder* ('or'), is problematic, because the speaker is neither committed to believe the truth of the first conjunct nor to believe the truth of the second conjunct.

The final problem I want to mention concerns the compositionality of the clause type meanings. According to Altmann (1987, 1993), the complex of features defining a clause type determines the illocutionary function of the clause in a holistic manner. In this conception, a unique feature, like the position of the finite verb or the characteristics of a topicalized phrase, does not have an independent contribution to the meaning of the clause type. I do not know if a fully compositional theory of sentence mood is possibly in general, but I will show that there are compositional traits in the construction of sentence mood which an adequate theory should capture.

2.2 The minimalist approach: sentence mood as semantic type of descriptive content

In the last section, I argued that a conception of sentence mood which involves an illocutionary predicate that connects the content of the clause directly to a speaker's illocutionary attitude produces several difficulties.[2] In this section, I want

1 According to Searle (1980), declarations do not express any attitude of the speaker.

2 Especially, the assumption that the sentence mood of V2-declaratives includes a predicate ASSERT which links the sentence utterance directly to assertive speech acts seems implausible. The

to discuss an approach which operates without the presence of illocutionary predicates in the representation of sentence mood. Such an approach is proposed for example by Portner (2005).[3] According to Portner, sentence moods are distinguished at the descriptive meaning dimension of a clause. In his theory, the meaning of a declarative is represented by a proposition, while the meaning of an interrogative is represented by a set of propositions:[4]

(15)

sentence type	sentence mood
declarative	proposition
interrogative	set of propositions

In Portner's approach, the illocutionary force potential of a sentence can be derived indirectly via pragmatic rules associated with the realization of the sentence in a root context. Those rules could be formulated as in (16):

(16) Let U(S) be the utterance of a sentence S in a root context.
   a. U(S) has an assertive illocutionary potential if the descriptive content of S is a proposition.
   b. U(S) has an erotetic illocutionary potential if the descriptive content of S is a set of propositions.

One advantage of this approach is that the problem of assigning different meanings to V-final interrogatives in dependency on their usage does not arise, since in both, root contexts like (8) and non root contexts like (9), the contribution of a V-final interrogative to the meaning of the clause is a set of propositions. The erotetic force potential in a root context can be simply derived via the pragmatic rule in (16b) and does not have to be represented in the meaning of the clause itself.[5]

assumption that the meaning of V1- or V2-interrogatives, contrary to V-final interrogatives, have an illocutionary predicate QUEST is maybe less problematic.

3 Another example of such an approach is presented by Brandt et al. (1992) and Rehbock (1992a,b). For reasons of space, it cannot be treated here. But this approach has the same problems as Portner's approach (cf. Tsiknakis 2016: 92–102).

4 Portner, in accordance with Hamblin (1973), takes the denotation of an interrogative clause to be the set of propositions which constitute a possible answer to the question expressed by the interrogative clause. This could easily be transferred to the approach of Karttunen (1977) who restricts the denotation of an interrogative to the set of propositions which constitute a true answer to the question, or to the approach of Groenendijk & Stokhof (1982, 1984), in which the denotation of an interrogative is said to be an index dependent proposition.

5 But it is still unclear how the finer differences between the usage of V1- and V2-interrogatives, on the one hand, and the corresponding V-final interrogatives, on the other hand, could be derived.

This approach, at first sight, is also fine with V2-declaratives in non root contexts like in (10) and (11). Since a V2-declarative has the same meaning as the corresponding V-final that-clause, it is no surprise from a semantic perspective that a V2-declarative can be replaced by a V-final that-clause.[6] There neither is any difficulty with respect to the use of V2-declaratives in declarations like (13). Because of the absence of the predicate ASSERT, the direct uses of V2-declaratives are not restricted to assertive speech acts. Nor is there a problem with the disjunction of two V2-declaratives in (14). The meaning of (14a) can simply be represented by the proposition in (17a), which results from the intersection of the propositions expressed by the two coordinated V2-declaratives. The meaning of (14b) could be represented by the proposition in (17b), which results from the union of the meanings of the two relevant conjuncts:

(17) a. $\lambda w.love_w(Maria, Peter) \wedge love_w(Maria, Peter)$
b. $\lambda w.love_w(Maria, Peter) \vee love_w(Maria, Peter)$

In spite of the advantages of this minimalist approach, there are still a few problems. The approach assumes that the V1- and V2-clause types in (1) have the same sentence mood as their V-final counterparts in (2). Since the use potential of a clause should be derived from its sentence mood, this predicts that the clause type pairs (1a)/(2a), (1b)/(2b) and (1c)/(2c) should exhibit the same use potential. But this prediction is not confirmed.[7] Let's consider the V-final that-clause for example. Although this clause type expresses a proposition, it cannot be used to to assert the proposition (cf. Truckenbrodt 2006a: 269f.). Evidence for this is given by the fact that, contrary to a V2-declarative, it is impossible to use a V-final that-clause to answer a question which asks for the truth of the proposition expressed by the V-final that-clause (vgl. (18) vs. (19)):[8]

(18) A: Liebt Maria Peter?
Loves Maria Peter
'Does Maria love Peter?'

B: #(Ja.) Dass Maria Peter liebt.
Yes That Maria Peter loves

6 But see below.

7 This point is made by Gutzmann (2015: 180–183), too.

8 Notice that, in contrast to English, in German V-final that-clauses can be used in a root context. In this cases, they have a deontic or exclamative reading (cf. Truckenbrodt 2013).

(19) A: Liebt Maria Peter?
Loves Maria Peter
'Does Maria love Peter?'

B: (Ja.) Maria liebt Peter.
Yes Maria loves Peter

Another problematic point is that although Portner's approach can explain that it is possible to use V2-declaratives in non root contexts like (10) and (11) as an alternative to a V-final that-clause, there is no explanation why a V-final that-clause normally cannot be replaced by a V2-declarative in the context of *emotive verbs* (cf. (20)), *desiderative verbs* (cf. (21)) and *directive verbs* (cf. (22)).[9] If the meaning of a V2-declarative provides just a proposition, just like the meaning of a V-final that-clause, this impossibility is not expectable at least from a semantic point of view:

(20) a. Fritz bedauert, dass Maria Peter heiratet.
Fritz regrets that Maria Peter marries

b. *Fritz bedauert, Maria heiratet Peter.
Fritz regrets Maria marries Peter
'Fritz regrets that Maria marries Peter.'

(21) a. Fritz wünscht, dass Maria Peter heiratet.
Fritz wishes that Maria Peter marries

9 V2-declaratives are not impossible in general after these verb classes (cf. Meinunger 2004, 2006). Emotive verbs permit V2-declaratives in argument position if they are interpreted as a verb of saying (cf. (i)). Desiderative verbs permit dependent V2-declaratives in connection with subjunctive mood (cf. (ii)) and directive verbs permit dependent V2-declaratives if the dependent proposition contains a modal verb (cf. (iii)):

(i) Das Gericht bedauerte, es sei nicht ermächtigt, in dieser Sache
the court regretted it is.SUBJ not entitled in this question
zu entscheiden.
to decide
'The court regretted not being entitled to decide the issue.' (Meinunger 2006: 464)

(ii) Fritz wünschte, Maria ginge nach Hause.
Fritz wish.SUBJ Maria go.SUBJ to home.
'Fritz wishes Maria would go home.'

(iii) Fritz befiehlt, Maria soll Peter heiraten.
Fritz orders Maria should Peter marry
'Fritz orders that Maria should go home.'

b. *Fritz wünscht, Maria heiratet Peter.
Fritz wishes Maria marries Peter
'Fritz wishes that Maria marries Peter.'

(22) a. Fritz befiehlt, dass Maria Peter heiratet.
Fritz orders that Maria Peter marries

b. *Fritz befiehlt, Maria heiratet Peter
Fritz orders Maria marries Peter
'Fritz orders that Maria marries Peter.'

Not only V2-declaratives and V-final that-clauses, V-final interrogatives differ in their use potential from their non verb final counterparts too. V1- and V2-interrogatives express that the speaker expects the addressee to answer the question formulated by the sentence utterance. For this reason, they are inadequate in a context in which it is clear that addressee does not know the answer to that question (vgl. (23)). V-final interrogatives do not show this expectation. As (24) illustrates, they are fine in such a context (cf. Truckenbrodt 2006a, 2006b, 2013):[10]

(23) A: Ich habe Peter seit Jahren nicht gesehen.
'I haven't seen Peter for years.'

B: Ich auch nicht.
'Me neither.'

A: #Mag er immer noch kubanische Zigarren?
likes he still Cuban cigars
'Does he still like Cuban cigars?'

(24) A: Ich habe Peter seit Jahren nicht gesehen.
'I haven't seen Peter for years.'

B: Ich auch nicht.
'Me neither.'

A: Ob er immer noch kubanische Zigarren mag?
whether he still Cuban cigars likes
'I wonder if he still likes Cuban cigars.'

10 Adding the particle *wohl* could fit the utterance of B in (23) in that context. But in this case, the utterance would be interpreted as a try to get the addressee to express a suspicion.

2.3 Interim conclusion

In this section, I discussed two competing approaches to clause type meanings: Firstly, an approach derived from the traditional view represented in Altmann (1987, 1993). According to this approach, clause type meanings involve an illocutionary predicate that determines the speaker's attitude which is expressed by the clause utterance towards the descriptive content of the clause. Secondly, the approach proposed in Portner (2005) where the distinctions of sentence mood are derived from the semantic type of the descriptive content. The illocutionary approach, inter alia, turned out to be too "rich". By the direct link to illocutionary force, the use potential of a clause type, especially in the case of the V2-declarative, is too restrictive. Portner's approach, however, is too minimalistic and therefore predicts more possibilities of use for a given clause type than there really are. The reason for this is that V-to-C movement and topicalization have no contribution to the meaning of a clause type in Portner's theory. Thus, what is needed is an approach to clause type meanings which, on the one hand, is abstract enough, so that the use potential of clause types can be determined as accurately as possible, and which, on the other hand, incorporates the contribution of V-to-C movement and topicalization to the meaning of a clause type in an adequate way. While the contribution of topicalization to the constitution of sentence mood was given little attention in the literature—except from Lohnstein (2000, 2007, 2020)—the contribution of V-to-C movement has been discussed in Lohnstein (2000, 2007, 2020), Gärtner (2002), Truckenbrodt (2006a, 2006b) and Antomo (2015).[11] In the following, I will present my own approach to this issue that picks up and develops many ideas from this previous work. But before I present my own approach in the sections 4 and 5, I will introduce the basic assumptions and concepts of my approach in the next section.

3 Basic assumptions and concepts

In line with Potts (2005), Portner (2007) and Gutzmann (2015), I assume that the interpretation of a clause involves more than one dimension of meaning. I distinguish here between the *descriptive dimension* and the *metadesriptive dimension*. The descriptive dimension codes what is relevant for the derivation of the

11 For a summary see Tsiknakis (2016: 102–121).

truth conditions or answerhood conditions of the clause, i. e. the proposition or set of propositions of the clause. The metadescriptive dimension is assumed to code information which determines the set of prototypical contexts in which the clause can be properly anchored. I will explain this assumption in more detail below.

A discourse context c will be regarded as the simplified structure of different components in (25):

(25) $c = \langle \ldots CG_c, QUD_c, D_c, \ldots \rangle$

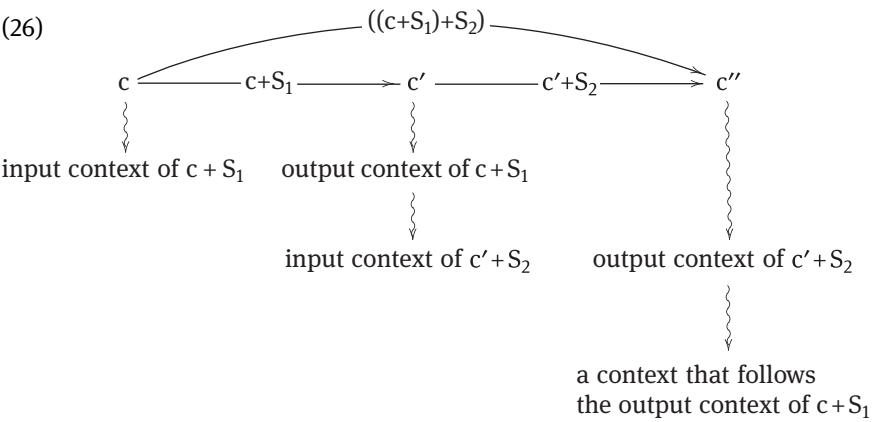
The component CGc represents the conversational background of the discourse context. It comprises the set of possible worlds in which every proposition to which the discourse participants publicly committed themselves is true. This component corresponds to the *context set* from Stalnaker (1978) which represents the information of the so-called *common ground* of the discourse participants. The QUD_c represents the *question under discussion* of the context in accordance to Roberts (2012). It contains the set of propositions whose truth value the discourse participants have agreed to clarify in the further course of the discourse.[12] The component D_c represents a set of derived contexts each including a conversational background that comprises a set of possible worlds which is compatible with the common information about the doxastic commitments of some individual which is topic in the discourse (cf. Farkas 2003).

A discourse context is not a static object. Clauses are anchored in a given context c via speech acts. Through this, the given context is (potentially) changed to a new, actualized context c′. In the following, I will call a given context c of the anchoring of a clause S_1 the *input context* of the anchoring of S_1 and the context c′ which is projected by the anchoring of S_1 the *output context* of the anchoring. The anchoring operation of the clause will be indicated by the symbol "+" which is taken from Heim (1992).[13] The projected output context c′ of the anchoring of the clause S_1 can serve as a new basis for the anchoring of another clause S_2 and so on. The output context c″ of the anchoring of S_2—and every context following c″—will be called a context that follows the output context c′ which results from the initial anchoring of S_1 in the context c. Hence, throughout a discourse a sequence of contexts is created, as illustrated in (26):

12 As soon as the truth value of a proposition is clarified, it is canceled from the QUD.

13 In Heim (1992) c + ϕ indicates the performance of the context change potential of ϕ in c.

(26)



As mentioned above, the metadescriptive meaning of a clause determines the set of prototypical contexts in which the clause can be properly anchored. It does so by putting conditions which have to be satisfied by the input context of the anchoring and putting conditions which have to be satisfied by the output context or a context which follows the output context of the anchoring. Conditions put on the input context will be called *input conditions*.[14] Conditions put on the projected output context or a context following the output context of the clause anchoring will be called *output conditions*. Through this, the metadescriptive meaning of a clause determines its context change potential. A context change is invoked in resolving the difference between the input and output conditions by the cooperative discourse participants:

(27) metadescriptive meaning = ⟨input conditions, output conditions⟩

In order to describe the input and output conditions in the metadescriptive dimension of a clause meaning, I will rely on the concept of *decidedness* in (28) which I adopted from Farkas (2003: 6):

(28) Decidedness
Let p be the proposition expressed by the descriptive content of a clause and X a set of possible worlds of a conversational background.
a. p is *positively decided* relative to X iff $X \subseteq p$.
b. p is *negatively decided* relative to X iff $X \cap p = \varnothing$.
c. p is *undecided* relative to X iff neither (28a) nor (28b) holds.
d. p is *decided* relative to X iff either (28a) or (28b) holds.

14 These are the presuppositions of the clause.

The concept of decidedness allows for a proposition p expressed by the descriptive content of a clause to be related to the information established in a conversational background X of a context. Three possibilities can be brought about by such a move. The first possibility is that p is positively decided relative to X (cf. (28a)). In this case, the conversational background only contains worlds in which p is true. The second possibility is that p is negatively decided relative to X (cf. (28b)). In this case, the background contains only worlds in which p is false. The last possibility is that p is undecided relative to X (cf. (28c)). In this case, the background neither contains only worlds in which p is true nor it contains only worlds in which p is false. In other words, the background contains at least one world in which p is true and at least one world in which p is false. (28d) comprises the possibilities (28a) and (28b) in which p is positively or negatively decided.

On the basis of the concept of decidedness in (28), I will define the related concept of *openness* in (29):

(29) Openness
Let Q be a set of propositions $\{p_1, p_2, ..., p_n\}$ expressed by the descriptive content of a clause and X the set of possible worlds of a conversational background.
   a. Q is *open* relative to X iff at least one proposition $p \in Q$ is undecided relative to X.
   b. Q is *(completely) closed* relative X iff every proposition $p \in Q$ is decided relative to X.

The concept of openness enables the relation of a set of propositions Q expressed by the descriptive content of a clause to the information established in a conversational background X. Two possibilities which can be brought about by this operation are relevant for the following considerations. The first possibility is that Q is open relative to the background (cf. (29a)). In this case, there is at least one proposition p in Q which is undecided relative to the background in accordance to the definition in (28c). The second possibility is that Q is completely closed relative to that background (cf. (29b)). In this case, every proposition in Q is decided relative to the background in accordance with (28d).

4 The interpretation of V-to-C movement

This section deals with the interpretation of V-to-C movement. The interpretation will be derived by a comparison of the usage of V1- and V2-interrogatives in (30) to their verb final counterparts in (31):

(30) a. Liebt$_1$ Maria Peter t_1?
loves Maria Peter
'Does Maria love Peter?'

b. Wen liebt$_1$ Maria t_1?
who.ACC loves Maria
'Who does Maria love?'

(31) a. ob Maria Peter liebt
whether Maria Peter loves
'whether Maria loves Peter'

b. wen Maria liebt
who.ACC Maria loves
'who Maria loves'

The V1-y/n-interrogative in (30a) has the same descriptive content as the corresponding V-final y/n-interrogative in (31a). The same holds for the V2-wh-interrogative in (30b) and the V-final wh-interrogative in (31b). According to Hamblin (1973), the descriptive content of an interrogative can be described as the set of propositions from which one can conclude the possible answers to the question expressed by the clause. In keeping with this, the y/n-interrogatives in (30a) and (31a) denote in any possible world w the set of propositions in (32a) which lead to the possible answers in (33) and the wh-interrogatives in (30b) and (31b) denote the set of propositions in (33b) which lead to possible answers like in (34):

(32) a. $\lambda p.p = \lambda w'.love_{w'}(Maria, Peter) \vee p = \lambda w'.\neg love_{w'}(Maria, Peter)$
b. $\lambda p.\exists x[Person_w(x) \wedge p = \lambda w'.love_{w'}(Maria, x)]$

(33) a. Maria loves Peter.
b. Maria doesn't love Peter.

(34) a. Maria loves Peter.
b. Maria loves Klaus.
c. Maria loves Thomas.
d. ...

From the equality of the descriptive content, it can be concluded that V-to-C movement does not affect the descriptive dimension of meaning. Nevertheless,

the clause type pairs (30a)/(31a) and (30b)/(31b) differ in their usage. In prototypical cases, the V1- and V2-interrogatives in (30) are used in erotetic speech acts to force the addressee to answer the expressed question, as shown in the following dialog sequences:

(35) A: Liebt Maria Peter?
loves Maria Peter
'Does Maria love Peter?'

B: Ja. Maria liebt Peter.
'Yes. Maria loves Peter.'

(36) A: Wen liebt Maria?
who.ACC loves Maria
'Who does Maria love?'

B: Maria liebt Peter.
'Maria loves Peter.'

In contrast to that, the V-final interrogatives in (31) normally function as complements, as shown for example in (37) and (38):

(37) a. Fritz sagt, **ob Maria Peter liebt**.
Fritz tells whether Maria Peter loves
'Fritz knows whether Maria loves Peter.'

b. Fritz sagt, **wen Maria liebt**.
Fritz tells who.ACC Maria loves
'Fritz knows who Maria loves.'

(38) a. Fritz fragt, **ob Maria Peter liebt**.
Fritz asks whether Maria Peter loves
'Fritz asks whether Maria loves Peter.'

b. Fritz fragt, **wen Maria liebt**.
Fritz asks who.ACC Maria loves
'Fritz asks who Maria loves.'

As already mentioned above, V-final interrogatives can be used in a root context to realize a monologic question, too. But this speech act differs from the erotetic speech act realized by V1- and V2-interrogatives in that point that the addressee

is not necessary expected to answer the question expressed by the interrogative.[15] For this reason, V-final interrogatives, in contrast to V1- and V2-interrogatives, are acceptable in contexts in which it is very unlikely that the addressee knows the answer to the question. This point was already shown for y/n-interrogatives in the examples (23) vs. (24). For wh-interrogatives this is a bit more difficult to illustrate because it is hard to get a monologic question reading for an independent V-final wh-interrogative without adding a modal particle like *wohl*, *bloß* or *nur* to the clause (cf. Truckenbrodt 2013: 241). But together with a particle, this clause type is fine in the relevant context:

(39) A: Ich habe von Maria seit der Schulzeit nichts mehr gehört.
'I haven't heard anything from Maria since school.'
B: Ich auch nicht.
'Me neither.'

A: Wen sie wohl geheiratet hat?
who.ACC she PART married has
'I wonder who she has married.'

The corresponding V2-wh-interrogative is infelicitous in a context like (39), as shown in (40). Adding the particle *wohl*, could make the V2-wh-interrogative acceptable in that context, as shown in (41), but I think there is still a subtle difference between (40) and (41) such that in (41) the speaker expects the addressee to answer the question by guessing. In (39), no hint at such an expectation can be found:

(40) A: Ich habe von Maria seit der Schulzeit nichts mehr gehört.
'I haven't heard anything from Maria since school.'
B: Ich auch nicht.
'Me neither.'

A: #Wen hat sie geheiratet?
who.ACC has she married
'Who has she married?'

15 That does not mean that the addressee is not allowed give an answer. It just means that the discourse is straightforward if he does not.

(41) A: Ich habe von Maria seit der Schulzeit nichts mehr gehört.
'I haven't heard anything from Maria since school.'
B: Ich auch nicht.
'Me neither.'.

A: Wen hat wohl sie geheiratet?
who.ACC has PART she married
'Who do you think she has married?'

B: Vermutlich jemanden, der viel Geld verdient.
'Probably someone who makes a lot of money.'

As an explanation to the differences between the usage of the clause types in (30) and their counterparts in (38), I propose that V-to-C movement is caused by a feature [F1] in C position which enriches the metadescriptive meaning dimension of the clause with the input and output conditions in (42):

(42) a. *Input conditions*
The descriptive content of the clause is undecided/open relative to X where X is a doxastic conversational background of the input context c.

b. *Output conditions*
The descriptive content of the clause is decided/completely closed relative to X″ where X″ is a doxastic conversational background of a context c″ that follows the output context c′ derived from the conversational background X.

Let me explicate the interpretation of [F1] in reference to the V2-wh-interrogative in (30b). The input condition in (42a) relates the descriptive content of the clause in (32b) to a doxastic conversational background X of the input context c. Since the descriptive content is a set of propositions, the concept which becomes relevant for the interpretation is the concept of openness in (29). The input condition demands that the content is open relative to X where X is a variable restricted to doxastic conversational backgrounds.[16] I assume that in root contexts, this variable is identified with the conversational background CG_c in the proposed model of discourse context in (25). So according to the definition of openness in (29a), the condition in (42a) requires that there is at least one proposition in the descriptive content which is undecided relative to CG_c. Furthermore, according to the defini-

16 The restriction to a doxastic background is established via the indicative verbal mood of finite verb. I assume that other verbal moods can restrict to diffrent kinds of backgrounds.

tion of undecidedness in (28c), this means that the content contains at least one proposition p for which it holds that there is at least one possible world in CG_c in which p is true and at least one world in CG_c in which p is false. If there is no such proposition in the content, the input condition is not satisfied and the (direct) anchoring of the clause in the context c would be infelicitous.

For more perspicuity, consider an utterance situation where there are three relevant candidates for answering the question who Maria loves: Klaus, Thomas and Peter. In this case the descriptive content of (30b) is the set of propositions in (43):

(43) $\{\lambda w.love_w(Maria, Klaus), \lambda w.love_w(Maria, Thomas), \lambda w.love_w(Maria, Peter)\}$

Additionally, assume a context c including a background CG_c which contains the worlds w_1, w_2 and w_3 with the facts given by the table in (44), where it holds that in w1, every elementary proposition of the set in (43) is true, in w2, only the proposition that Maria loves Klaus is true, and in w3, only the proposition that Maria loves Peter:

(44)

	w_1	w_2	w_3
$\lambda w.love_w(Maria, Klaus)$	1	1	0
$\lambda w.love_w(Maria, Thomas)$	1	0	0
$\lambda w.love_w(Maria, Peter)$	1	0	1

In this scenario, the input condition of [F1] is satisfied and the anchoring of the clause is felicitous since at least one of the propositions, even every proposition, denoted by the clause is undecided relative to CG_c. This means it is completely unclarified in the present information state of the discourse which of the relevant persons Maria loves.

But consider a second scenario with the facts given by the table (45), where it holds that the proposition that Maria loves Klaus and the proposition that Maria loves Thomas are false in every world of CG_c and the proposition that Maria loves Peter is true in every world:

(45)

	w_1	w_2	w_3
$\lambda w.love_w(Maria, Klaus)$	0	0	0
$\lambda w.love_w(Maria, Thomas)$	0	0	0
$\lambda w.love_w(Maria, Peter)$	1	1	1

In this scenario, there is no proposition in the descriptive content of the clause that is undecided relative to CG_c. The proposition that Maria loves Klaus and the proposition that Maria loves Thomas are negatively decided and the proposition

that Maria loves Peter is positively decided. So the descriptive content of the clause is completely closed relative to CG_c. Therefore, the input condition is not satisfied and the direct anchoring of the clause would be infelicitous. In this scenario, the answer to the question is already completely clarified in the discourse, so the direct anchoring of the clause would be pointless.[17]

I turn to the output condition of [F1] in (42b). This condition demands that the descriptive content has to be completely closed relative to a background $CG_{c''}$ of a context c'' that follows the output context c' that is projected by the anchoring of the clause in the input context c. This means that every proposition in the descriptive content that is still undecided relative to CG_c has to become positively or negatively decided relative to $CG_{c''}$. Consider again the scenario given in the table of (44) where every proposition in the descriptive content of the clause is undecided relative to the background CG_c. There are many possibilities to satisfy the output condition of [F1] in this scenario. One possibility would be to eliminate the worlds w_1 and w_2 from that background by appropriate assertions throughout the discourse such that w_3 remains the only possible world in the derived background (cf. (46)).[18] Relative to that background, every proposition in the descriptive content of the clause would be decided: the proposition that Maria loves Klaus and the proposition that Maria loves Thomas would be negatively decided and the proposition that Maria loves Peter would be positively decided. So the descriptive content of the clause would be completely closed and the output condition of [F1] would be satisfied:

(46)

	~~w_1~~	~~w_2~~	w_3
$\lambda w.love_w$(Maria, Klaus)	~~1~~	~~1~~	0
$\lambda w.love_w$(Maria, Thomas)	~~1~~	~~0~~	0
$\lambda w.love_w$(Maria, Peter)	~~1~~	~~0~~	1

Remember that the output condition of [F1] requires that this condition is satisfied in a context that follows the output context of the anchoring. Ideally, this is the context c'' which immediately follows the output context c'.[19] In order to realize

17 Notice that only a direct anchoring is forbidden in this context, an indirect anchoring would still be felicitous and could lead to the interpretation of an rhetorical question for example.

18 Such an assertion could be the assertion that Maria loves Peter (and no one else) for example.

19 But the output condition of [F1] does not need to be fulfilled necessarily in the context that immediately follows the output context. It is also possible that the output condition is fulfilled step by step by giving partial answers to the relevant question such that the required output context is realized at a later stage of the discourse. The output condition thus defines a kind of vanishing point which determines the direction of the conversation.

this, the discourse participants need to anchor a clause in c′ that gives the complete answer to the question. To ensure this, the descriptive content of the clause has to become the question under discussion in c′, since the question under discussion of c′ contains the propositions which have to be decided in the following course of the discourse. Summing up, the interpretation of [F1] in the V2-wh-interrogative enriches the meaning of the clause with the input and output conditions in (42) that define the prototypical context anchoring for the clause given in (47):[20]

(47) c + Wen liebt Maria? = $\begin{cases} \#, \text{ iff (32b) is completely closed relative to } CG_c \\ c', \text{ where } QUD_{c'} = QUD_c \cup \{(32b)\} \end{cases}$

V-final interrogatives lack the input and output conditions in (42). Their meaning just provides a descriptive content. Therefore, they are predestinated to function as complements for different kinds of predicates as shown in the examples in (37) and (38). In (37), the V-final interrogatives serve as complements for the predicate *sagen* (‘*tell*’). This predicate presupposes that the descriptive content expressed by the embedded interrogatives is closed relative to the conversational background that represents the common information about the doxastic model of the matrix subject Fritz. In contrast to that, the V-final interrogatives in (38) serve as complements to the predicate *fragen* (‘*ask*’). This predicate presupposes that the descriptive content of its interrogative complement is open relative to the conversational background that represents the common information about the doxastic model of the matrix subject.

Since the V-final interrogatives do not carry a metadescriptive dimension of meaning their function in root contexts is not restricted linguistically, either. In this cases, their illocutionary function has to be derived pragmatically by the context.[21] The use of modal particles can help to determine the function additionally. At this point I can not present a elaborated analysis for independent V-final interrogatives. But the main point I want to make here is, since V-final interrogatives are not marked with the [F1] feature, their descriptive content has not to become necessarily part of the question under discussion. This explains why they are adequate in contexts like (24) and (39) contrary to their V1- and V2-counterparts.

20 The idea that V-to-C movement relates the clause content to the question under discussion is already represented in Truckenbrodt (2006b) and Antomo (2015). I think this holds only for the uses in root contexts where the doxastic variable X in the interpretation of [F1] is identified with the conversational background CG_c of the context.

21 For more details concerning the use of V-final interrogatives in a root context see Truckenbrodt (2013).

5 The interpretation of topicalization

This section deals with the interpretation of a [–wh]-phrase in SpecC in V2-declaratives like (48):

(48) Maria$_2$ liebt$_1$ t$_2$ Peter t$_1$.
Maria loves Peter
'Maria loves Peter.'

The V2-declarative in (48) has the same descriptive content as the V-final that-clause in (49), in which neither V-to-C movement nor topicalization takes place, namely the proposition in (50):

(49) dass Maria Peter liebt
that Maria Peter loves
'that Maria loves Peter'

(50) λw.love$_w$(Maria, Peter)

From this I conclude that topicalization, just like V-to-C movement, does not effect the descriptive dimension of the clause meaning. Nevertheless, the two clause types differ in their usage. V2-declaratives are prototypically used in root contexts to assert the truth of the proposition they express. By this, an explicit or implicit conforming yes-no question is answered as illustrated in (51):

(51) A: Liebt Maria Peter?
'Does Maria love Peter?'

B: Ja, Maria liebt Peter.
yes Maria loves Peter
'Yes, Maria loves Peter.'

A V-final that-clause is prototypically used as a complement for different types of predicates, as shown for example in (52):

(52) a. Fritz glaubt, **dass Maria Peter liebt.**
Fritz believes that Maria Peter loves
'Fritz believes that Maria loves Peter.'

b. Fritz bedauert, **dass Maria Peter liebt**.
Fritz regrets that Maria Peter loves
'Fritz regrets that Maria loves Peter.'

This clause type cannot be used in a root context to assert the truth of the expressed proposition and therefore is not appropriate to answer the question expressed by a conforming y/n-interrogative (cf. Altmann 1993: 1020, Truckenbrodt 2006a: 269f.):

(53) A: Liebt Maria Peter?
'Does Maria love Peter?'

B: #Ja, dass Maria Peter liebt.
Yes that Maria Peter loves
'lit.: Yes, that Maria loves Peter.'

To explain the differences of those two related clause types, I propose that topicalization is caused by a feature [F2] in C position which modifies the input and output conditions associated with the feature [F1] in (42) such that it supplements the existing conditions with an additional output condition. The result of this process is that the combination of [F1] and [F2] expresses the conditions in (54), whereas the condition in (54b)(i) represents the condition added by [F2]:

(54) a. *Input conditions*
The descriptive content of the clause is undecided/open relative to X, where X is a doxastic conversational background of the input context c.

b. *Output conditions*
(i) The descriptive content of the clause is positively decided relative to X′ where X′ is a doxastic conversational background of the output context c′ derived from the conversational background X.
(ii) The descriptive content of the clause is decided/completely closed relativ to X″ where X″ is a doxastic conversational background of a context c″ that follows the output context c′ derived from the conversational background X.

Let me explain how the interpretation of [F1] and [F2] works in reference to the V2-declarative in (48). Since the declarative expresses a proposition in its descriptive dimension of meaning, the concept that becomes relevant concerning the interpretation of the features is the concept of decidedness in (28). The input condition in (54a)—which is already provided by the interpretation of the feature [F1]—requires that the proposition expressed by the V2-declarative is undecided relative to a doxastic conversational background X of the input context c. Again, I assume that this background is identified with the common ground CG_c if the clause is anchored in a root context. This means that according to the definition in (28c), the background CG_c has to contain at least one possible world in which

the proposition is true and at least one possible world in which the proposition is false. Otherwise, the direct anchoring of the V2-declarative in c would be infelicitous. Such context could, for example, be a context with a common ground defined by the table in (44) in which the proposition that Maria loves Peter is true in w_1 and w_3 but false in w_2. In a context with a common ground given in the table of (45) where the proposition is true in every world of the background the direct anchoring would not be permitted, because the proposition would be positively decided already.[22]

The output condition in (54b)(i) provided by the feature [F2] requires that the proposition is positively decided relative to that background in the output context c′ which is projected through the anchoring of the clause in c. According to the definition in (28a), this means that $CG_{c'}$ may only contain worlds in which the proposition expressed by the V2-declarative is true. Consider again a context with a common ground given by the table in (44). For satisfaction of the output condition (54b)(i), the world w_2 needs to be cancelled such that the background is reduced to the set of possible worlds in which the proposition is true. The satisfaction of the output condition (54b)(i) ensures that the output condition (54b)(i) is satisfied at the same time because a proposition which becomes positively decided in a context c^n is supposed to stay (positively) decided in every context that follows c^n. To sum up, the metadescriptive component of the V2-declarative in (48) defines the context change potential in (55):

$$(55)\quad c + \text{Maria liebt Peter} = \begin{cases} \#, \text{ iff (48) is decided relative to } CG_c \\ c', \text{ where } CG_{c'} = CG_c \cap \lambda w.love_w(\text{Maria, Peter}) \end{cases}$$

The V-final that-clause in (49) lacks a metadescriptive meaning component. Therefore it is predestinated for the use as a complement for different kind of predicates, as for example in (52). In (52a) it functions as complement of the predicate *glauben* ('believe') which presupposes that the embedded proposition is undecided in the input context relative to the conversational background which represents the information of the discourse participants about the doxastic model of the matrix subject Fritz. In (52b), it is used as complement for the predicate

22 In such a context the anchoring of the declarative would be redundant because the discourse participants have already clarified that Maria loves Peter. Otherwise, if the background contained only worlds in which the proposition is false the anchoring of the declarative would lead to a contradiction.

bedauern ('regret') which presupposes that the embedded proposition is positively decided relative to that background.[23]

Since the V-final that-clause lacks the features [F1] and [F2], this clause type cannot be used in a root context to update the information of the common ground by the expressed proposition.[24] The illocutionary function of a V-final that-clause in root context has to be derived pragmatically by the context. The use of modal particles can help to determine that function.[25]

6 Discussion

The advantage of the proposed approach over the minimalist approach by Portner (2005) is that it allows for the derivation of the different uses of the V1- and V2-clause types in (1) versus the V-final clauses in (2) due to the additional meta-descriptive meaning component with which the V1- and V2-clauses are equipped. In Section 4, it was argued that V1-y/n-interrogatives and V2-wh-interrogatives are marked with a feature [F1] whose interpretation causes the descriptive content of the clause to become a question under discussion when the clause is used in a root context. Since a V-final interrogative lacks the [F1]-feature, its content does not have to become a question under discussion bearing the effect that the addressee is not necessarily expected to answer the expressed question when the V-final interrogative is used in a root context. In Section 5, I argued that V2-declaratives are marked with a feature [F2] additionally to the [F1]-feature. The interpretation of [F2] in combination with [F1] determines that independent V2-declaratives are prototypically used for illocutionary acts which lead to an elimination of the worlds in the common ground in which the proposition expressed by the clause is false. This accounts not only for the uses in assertive speech acts but also for the uses in declarations (see below). Since V-final that-clauses lack this meaning component, they cannot be used for such acts.

The proposed metadescriptive meaning component of the V2-declarative can also explain the prototypical cases where this clause type is used as an alternative to a V-final that-clause in argument function without committing the speaker to

23 For more details concerning the relation of the different kinds of predicates and the concept of decidedness see Farkas (2003).

24 That does not mean that V-final clauses cannot be used for assertions in general but in those cases their assertive meaning has to be derived by other means.

25 For more details concerning the use of V-final that-clauses in a root context see Truckenbrodt (2013).

believe the truth of the dependent proposition like in (10) and (11).[26] The main difference between the depended and independent uses is that in the latter ones, the input and output conditions which are associated with the features [F1] and [F2] are evaluated relative to a conversational background of a derived context of D_c in the assumed discourse model of (25). This is made possible by the variable X for doxastic backgrounds in the conditions of [F1] and [F2] and has the consequence that the commitment to the expressed proposition is shifted away from the speaker.[27] In (10) and (11), the variable is identified with the doxastic background which represents the information the discourse participants have about the doxastic commitments of the individual Fritz. In these constructions, the V2-declarative can replace the V-final that-clause because the constructions imply that the embedded proposition becomes positively decided relative to the embedded background and therefore, they are compatible with the conditions of [F1] and [F2].[28] The constructions in (20)–(22) do not imply that the embedded proposition becomes positively decided relative to the embedded background. Thus, these constructions are not compatible with the conditions of [F1] and [F2], with the effect that a V-final that-clause cannot be replaced by a V2-declarative. The construction in (20) is ungrammatical because the embedded proposition is presupposed to be positively decided relative to the embedded background in the input context and therefore violates the input condition of [F1]. Evidence for this is given by the negation test:

(56) a. Fritz bedauert, dass Maria Peter liebt.
'Fritz regrets that Maria loves Peter.'
→ Fritz believes that Maria loves Peter.

26 Fore some more details see Tsiknakis (2016: 214–226).

27 This idea is also present in Truckenbrodt (2006a).

28 By this, I mean that they convey the new information about what Fritz believes or expresses to believe. The proposed approach can also explain why in contrast to (10), V2-declaratives become impossible in argument position when the predicate in the matrix clause is negated:

(i) *Fritz glaubt nicht, Maria liebt Peter.
Fritz believes not Maria loves Peter

(i) expresses that it is not the case that the doxastic model of Fritz contains only worlds in which Maria loves Peter. In Tsiknakis (2016: 224f.), I falsely assumed that this is equivalent to the sentence *Fritz believes that Maria does not love Peter* which conveys that the doxastic model of Fritz contains only worlds in which Maria does not love Peter. I want to correct this here. (i) just expresses that there is at least one world in which the proposition is false. This does not necessarily mean that it is false in every world. Either way, this is incompatible with the output condition which is introduced by the feature [F2] and therefore the V-final that-clause cannot be replaced by a V2-declarative in this case.

b. Fritz bedauert nicht, dass Maria Peter liebt.
'Fritz does not regret that Maria loves Peter.'
→ Fritz believes that Maria loves Peter.

The constructions in (21) and (22) are not compatible with the output condition of [F2] because they do not imply that the matrix subject believes the embedded proposition at all:[29]

(57) a. Fritz will, dass Maria Peter liebt.
'Fritz wants that Maria loves Peter.'
↛ Fritz believes that Maria loves Peter.

b. Fritz befiehlt, dass Maria Peter liebt.
'Fritz orders that Maria loves Peter.'
↛ Fritz believes that Maria loves Peter.

29 As mentioned in footnote 9, V2-declaratives can be used under certain circumstances as arguments of emotive, desiderative and directive verbs. I have no explanation for the uses with desiderative verbs in combination with subjunctive mood but I suspect subjunctive mood accommodates the presence of a context that is in some way updated with the information expressed in the dependent proposition. When emotive verbs are turned into verbs of saying the same explanation as for the construction in (11) applies. An explanation for the uses with directive verbs in combination with a modal verb is given in Truckenbrodt (2006a: 289). In this case, the construction implies that the matrix subject believes the embedded proposition. That this is an implication that expands the information about the doxastic commitments of the matrix subject and not a presupposition is supported by the negation test:

(i) a. Maria befiehlt, dass Peter nach Hause gehen soll.
Maria orders that Peter to home go should
'Maria orders that Peter should go home.'
→Maria believes that Peter should go home.

b. Maria befiehlt nicht, dass Peter nach Hause gehen soll.
Maria orders not that Peter to home go should
'Maria does not order that Peter should go home.'
↛Maria believes that Peter should go home.

Another problematic point concerning the suggested account are V2-declaratives in dependency on the predicate *hoffen* ('hope') because in such constructions (cf. (ii)), there is no implication that the matrix subject believes the proposition expressed by the V2-declarative (cf. Meinunger 2006: 471f. for some discussion):

(ii) Maria hofft, Peter geht nach Hause.
Maria hopes Peter goes to home
'Maria hopes that Peter goes home.'

Another benefit of the outlined approach is that a uniform meaning is assigned to V-final clauses. The meaning of a V-final that-clause is supposed to provide a proposition and that of a V-final interrogative a set of propositions[30] regardless of the clause types are used dependently or independently. When used independently, the illocutionary function has to be derived from the circumstances of the utterance situation in accordance with the descriptive content of the clause. The illocutionary function can be restricted by the use of modal particles additionally.

The lack of an illocutionary predicate ASSERT opens up the possibility to use V2-declaratives directly not only for assertive speech acts but also for declarations as in (13). A successful declaration creates a new fact in the world which instantiates the proposition expressed by the V2-declarative clause. By this, the information represented in the common ground is updated at the same time. The main difference between an assertion and declaration is that in an assertion, the the fact that instantiates the expressed proposition is assumed to exist independently from the success of the illocutionary act (cf. Brandt et al. 1992, Rehbock 1992a). So, there is no need for a reinterpretation or cancellation of an illocutionary predicate in the proposed conception of the clause type meaning like in Altmann's approach.

The problem of disjunction of two V2-declaratives like in (14b) does not arise in the maintained conception, either, if one assumes that the anchoring of a disjunction of two clauses S_1 and S_2 in an input context c is equivalent to the union of anchoring S_1 in c and anchoring of S_2 in c (cf. Gärtner & Michaelis 2010: 8f.):[31]

(58) $c + (S_1 \textit{ oder } S_2) = (c + S_1) \cup (c + S_2)$

From (58) follows that (14b) is felicitous if the input context c satisfies the input conditions of both the input conditions of the V2-clause *Maria liebt Peter* (S_1) and the input conditions of the V2-clause *Peter liebt Sarah* (S_2). This means that the proposition expressed by S_1 and the proposition expressed by S_2 have to be undecided relative to the common ground of the input context. If this is the case, this leads to the union of the output context which results from the anchoring of S_1 in c and the output context which results from the anchoring of S_2 in c. The anchoring of S_1 in c eliminates the worlds of the common ground in which the proposition of S_1 is false. The anchoring of S_2 eliminates the worlds in which the proposition of S_2 is false. Therefore, the union of the two contexts creates a common ground which contains worlds in which either S_1 or S_2 is true or both, but no world in which both are false.

30 Or whatever descriptive object is assumed to be the denotation of an interrogative.

31 For an elaborated treatment of the connectives in dynamic semantics see Rothschild (2011).

Using the example of declarative and interrogative clause types in German, the paper sketched a sentence mood theory that takes a balanced position between the maximalist approach presented in Altmann (1987, 1993) and the minimalist approach presented in Portner (2005). On the one hand, it showed that the representation of a clause type meaning must include, in addition to a descriptive meaning component, a metadescriptive component from which the usage of the clause type can be derived. On the other hand, it illustrated, especially in case of V2-declaratives, that the metadescriptive component does not constitute a direct link to illocutionary force. One strength of the sketched theory is that it derives the uses of the discussed clause types compositionally from the interpretation of the involved linguistic means. The movement of an indicative verb to the left periphery is assigned a uniform function. It signals that undecided propositions have to become decided relative to a variable doxastic background of the discourse context. The function of topicalization is to indicate whether this goal is assumed by the speaker to be achieved directly through the anchoring of the clause in the context or indirectly in the following course of the discourse.

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Addresses

Jun.-Prof. Dr. Leah S. Bauke
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstraße 20
42119 Wuppertal
email: bauke@uni-wuppertal.de
url: http://www.linguistik.uni-wuppertal.de/bauke

Prof. Dr. Josef Bayer
General and Germanic Linguistics

Postal Address:
Department of Linguistics University of Konstanz
Universitätsstraße 10
Box 191
78457 Konstanz
Germany
email: josef.bayer@uni-konstanz.de

Dr. Constantin Freitag
Postal Address:
parlamind GmbH
Schlesische Str. 27
10997 Berlin
email: constantin.freitag@parlamind.com

Prof. Dr. Ulrike Freywald
Professor of German Linguistics: Grammar and Didactics
TU Dortmund: Faculty of Cultural Studies

Postal Address:
Technische Universität Dortmund
44221 Dortmund
email: ulrike.freywald@tu-dortmund.de

Prof. Dr. Roland Hinterhölzl
Professor of German linguistics
Department of Linguistics and Comparative Cultural Studies
University Ca'Foscari
Venice

Postal Address:
Ca' Bembo
Dorsoduro 1075
30123 Venezia
email: rolandh@unive.it
url: http://www.unive.it/persone/rolandh

Prof. emeritus Dr. Joachim Jacobs
Professor of German Linguistics
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: jacobs@uni-wuppertal.de
url: http://www.linguistik.uni-wuppertal.de/jacobs

Prof. Dr. Horst Lohnstein
Professor of German Linguistics
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: Horst.Lohnstein@uni-wuppertal.de
url: http://www.lohnstein.de

Prof. Dr. Svetlana Petrova
Professor of German Historical Linguistics
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: petrova@uni-wuppertal.de

https://doi.org/10.1515/9781501508141-014

url: http://www.linguistik.uni-wuppertal.de/Petrova

Prof. Dr. Cecilia Poletto
Professor of Romance Linguistics
Goethe University Frankfurt am Main

Postal Address:
Norbert Wollsteinpl. 1
60323 Frankfurt am Main
email: poletto@em.uni-frankfurt.de url: https://cecilia-poletto.de

Prof. Dr. Joachim Sabel
Professor of Linguistics
Department of Modern Languages and Literature
Université catholique de Louvain

Postal Address:
Place Blaise Pascal 1
B-1348 Louvain-la-Neuve (Belgium)
email: joachim.sabel@uclouvain.be
url: uclouvain.be/fr/repertoires/joachim.sabel

Dr. Frank Sode
Researcher
Goethe University Frankfurt

Postal Address:
FB 10 – Institute of Linguistics
Norbert-Wollheim-Platz 1
60629 Frankfurt a. M.
email: sode@em.uni-frankfurt.de
url: http://franksode.info/

Dr. Nathalie Staratschek
Research Fellow
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: nathaliest@gmail.com
url: http://www.linguistik.uni-wuppertal.de/staratschek

PD Dr. Sonja Taigel
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: sonja.taigel@uni-wuppertal.de
url: http://www.linguistik.uni-wuppertal.de/taigel

Prof. Dr. Hubert Truckenbrodt
Researcher at the Leibniz-Zentrum Allgemeine Sprachwissenschaft (ZAS) Berlin
Adjunct (apl.) Professor of German and General Linguistics at Humboldt-University Berlin

Postal Address: ZAS
Schützenstr. 18
10117 Berlin
email: truckenbrodt@leibniz-zas.de
url: http://www.zas.gwz-berlin.de/mitarbeiter_truckenbrodt.html

Dr. Antonios Tsiknakis
Research Fellow
Institute of Linguistics
Faculty of Humanities and Cultural Sciences
University of Wuppertal

Postal Address:
Gaußstr. 20
42119 Wuppertal
email: antonios.tsiknakis@uni-wuppertal.de
url: http://www.linguistik.uni-wuppertal.de/tsiknakis

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https://doi.org/10.1515/9781501508141-015

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