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A syntactic approach to pragmaticalization

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This paper puts forward a syntactic account for the evolution of pragmatic expressions with a focus on sentence adverbs and modal particles. These go back to very different sources, ranging from adjectives or adverbs to focus particles to fully-fledged finite or non-finite clauses. The paper's main aim is to identify the major characteristics and the driving force behind these developments. The proposal is built on recent synchronic approaches positing a syntactically encoded layer in sentential architecture which hosts projections related to evidential or epistemic speaker evaluation, to properties of the speech act and the like (e.g. Krifka 2023). It will be argued that it is this layer that propels pertinent diachronic processes of 'pragmaticalization' along different pathways. Based on Diewald's (2011) notion of pragmaticalization as grammaticalization of discourse functions, pragmaticalization is defined syntactically as grammaticalization into this higher functional layer. This way, the key characteristics of the process and its differences to classical grammaticalization can be accounted for.

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1 Introduction

In the last decades, there has been a steadily growing interest in the nature of expressions which do not contribute to the main proposition of an utterance but bear an extra-propositional pragmatic interpretation. These typically contribute a subjective attitude of the speaker, specify the evidential basis or structure the discourse. In the present paper, we will focus on various types of such expressions: on epistemic, evidential, evaluative and speech-act adverbs (i.e. the major subclasses of so-called ‘sentence adverbs’ = SAdvS) and on modal particles (= MPs; also called: discourse particles).

From a diachronic perspective, it has been noted that in many cases the sources were ultimately non-pragmatic expressions with a concrete lexical meaning. Accordingly, the respective diachronic processes involved have been attributed to ‘subjectification’, a term that was coined by Elizabeth C. Traugott (e.g. Traugott 1989) in analogy to ‘grammaticalization’, or to ‘pragmaticalization’ (e.g. Erman & Kotsinas 1993). However, the relationship to processes of grammaticalization is still contentious.

An example would be the German evidential adverb *offensichtlich* ‘evidently’, which diachronically goes back to an adjective that in its predicate-related, adverbial use, conveyed the concrete meaning ‘in an openly visible way’ (Axel-Tober & Müller 2017; cf. also Traugott 1989 on English *apparently* and *evidently*). Sometimes, this older, predicate-related use has been retained so that the respective expressions are now polyfunctional and can be used either as predicate- or sentence-level modifiers, e.g. English *frankly* ‘in a frank/open way’ or ‘frankly speaking’) as in (1).

(1) **Frankly**, you should speak to your doctor **frankly**.

Similarly, the German MP *ruhig* has arguably developed from the adjective *ruhig*, which in its adverbial use conveys the meaning ‘in a calm manner’. In present-day German, both expressions can occur in a single sentence:

(2) Bleib du **ruhig ruhig** sitzen und warte ein bisschen!
 Remain you MP calmly sit and wait a bit
 ‘Don’t worry, just remain seated calmly and wait a bit.’

In the present paper, we want to gain a better understanding of the characteristics and behavior of such diachronic processes and their key distinctive features. In particular, we address the questions: What is the driving force behind these developments, which seem to be very frequent, not only in English or German, but also cross-linguistically? What are the syntactic mechanisms involved in these changes?

Our focus is on the syntactic basis of such apparent subjectification or pragmaticalization phenomena. We build our proposal on the growing body of synchronic literature that argues that

there is a syntactically encoded layer in sentential architecture which hosts projections related to evidential or epistemic speaker evaluation and to properties of the speech act etc. (e.g. Wiltschko 2021; Krifka 2023).

Our approach can be seen as an adoption of Diewald's notion of 'pragmaticalization', defined as the grammaticalization of discourse functions, but within a generative syntactic framework. Our proposal also accounts for the key characteristics of the process, namely heterogeneous paths, high frequency of development, and differences from canonical instances of grammaticalization. While we shall argue that the communicational syntactic layer exerts a constant potential pull, expressions do not seem to freely develop into these layers. We propose based on German that the pertinent reanalyses and recategorizations are catalyzed by syntactic constellations of string ambiguities, which in German, an OV language with flexible word order, typically come about in the middle field.

Our proposal can be summarized as follows:

- (3) i) Pragmaticalization is defined by target category:
 Pragmaticalization =_{def} the development by which an expression becomes part of the communicational layer of the clause.
- ii) Pragmaticalization is catalyzed by syntactic ambiguity.

We will argue that it is the communicational layer that propels pertinent processes along two widely-found pathways that match these criteria (cf. Axel-Tober et al. to appear): In the first pathway (= Pathway I), pragmatic expressions may originate in clause-internal items from a low clausal domain e.g. in predicate-related adverbials (adjectives, adverbs), focus particles etc. Along the second pathway (= Pathway II), integrated pragmatic expressions may develop from parenthetical or interjection-like material. Both pathways are well-known in the literature, but their joint theoretical relevance has not been paid attention to so far. Accordingly, much of the empirical material in this paper is based on classic paradigm cases from the literature, but we will supplement the picture with new example material from German corpora.¹

The paper is structured as follows: In Section 2, we briefly introduce the notion of 'pragmaticalization' and present our view of pragmaticalization as grammaticalization into the communicational layer. In a further step, we give an overview of expressions that have developed along Pathways I and II in German and cross-linguistically in Section 3. In Section 4, the data from the previous section will be discussed in light of theories of pragmaticalization,

¹ The present-day German examples have been retrieved from DeReKo (via COSMAS II). In some cases, we refer to examples from the internet and to constructed examples to back up our argumentation. For Old, Middle and Early New High German, we checked the respective corpora from the DDD-collection (<https://www.deutschdiachrondigital.de/>). Since most of the developments discussed in this paper are more recent, most of the examples cited were eventually taken from the DTA, which also contains texts from the 17th to the 20th century. The paper only aims at a qualitative example discussion.

grammaticalization, and subjectification and we will explain how our proposal accounts for the phenomena in Pathway I and II. Section 5 will inspect the nature of the communicational layer and its connection to non-at issue phenomena and discuss existing proposals from the literature. The last section concludes the paper.

2 Pragmaticalization as grammaticalization into the higher layer

In the diachronic literature, the notion of ‘pragmaticalization’ has been proposed to account for the development of pragmatic expressions. In this section, we argue that what propels pragmaticalization processes is the presence of a communicational layer in syntactic architecture. While pragmaticalization is often not clearly defined, Frank-Job (2006: 361) describes it as “the process by which a syntagma or word form, in a given context, changes its propositional meaning in favor of an essentially metacommunicative, discourse interactional meaning”. There is no ultimate consensus about its extension and pragmaticalization has been connected to a range of constructions, from the development of parentheticals like *I think, you know* (Erman & Kotsinas 1993; Aijmer 1997; Brinton 2008) to adverbials from prepositional phrases like *after all, indeed, besides* (cf. Traugott 1995; Brinton & Traugott 2005; Heine 2013) or to those with a different origin, such as *though* (Barth-Weingarten & Couper-Kuhlen 2002), to MPs (cf. Diewald 2011; Waltereit 2012).²

While Frank-Job defines pragmaticalization purely in terms of meaning change, Diewald (2006: 405) proposes a grammar-based definition, arguing “that the pragmatic functions of discourse markers/particles are genuine grammatical functions which are indispensable for the organization and structuring of spoken dialogic discourse”. Accordingly, she defines pragmaticalization later as “the grammaticalization of discourse functions” (Diewald 2011).

In a formal syntactic framework, this conception of pragmaticalization as the grammaticalization of discourse functions entails that these discourse functions are encoded in the functional architecture. Accordingly, there must be a layer that encodes the relevant notions, which are distinct from lower grammatical categories in that they convey certain pragmatic functions. We will call this part of the functional architecture the communicational layer (= CL) as in **Figure 1** and define it as in (4b). In this syntactic split, parts of the sentence that can be at-issue and used to answer a question under discussion will be found in the propositional layer

² Most of these cases have been treated as discourse markers. Pragmaticalization has been discussed specifically as the diachronic process by which this diverse class of markers is formed. Consequently, it is not uncontroversial which elements should be included. MPs/‘discourse particles’ might be considered pragmatic markers, but not discourse markers (cf. Diewald 2011; Waltereit 2012; Heine 2013). In contrast, epistemic adverbs are not necessarily considered discourse markers and their development has been discussed as grammaticalization. In this paper we are not at all concerned with the delineation of discourse markers.

(= PL), while notions that are commonly non-at-issue like evidentiality are encoded by elements that occupy the higher syntactic layer, here CL (cf. Müller 2021).

- (4)
- a. The propositional layer (= PL) provides content by describing situations and specifying their spatio-temporal location in the world.
 - b. In the communicational layer (= CL) different relations between content, speaker, hearer, and the common ground are conveyed.

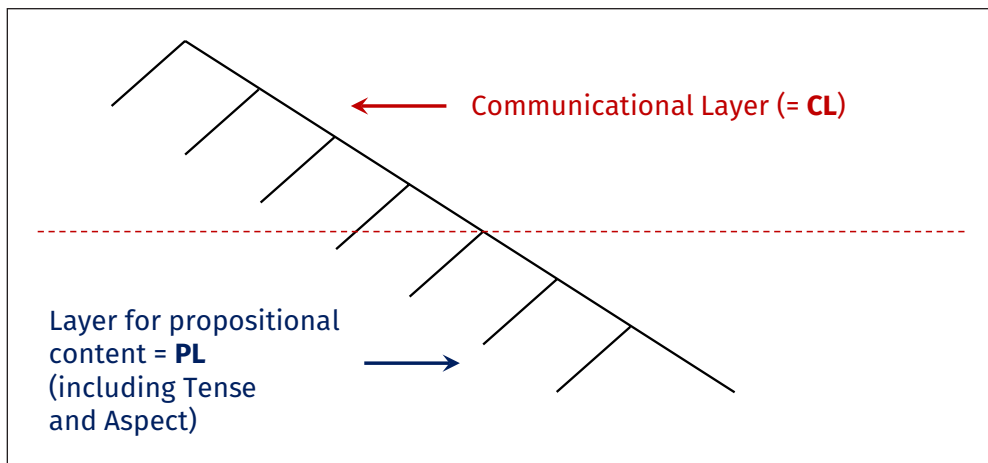


Figure 1: The communicational layer.

There are several existing syntactic proposals containing such a syntactic split (most recently e.g. Wiltschko 2021; Krifka 2023). It is important to note that we do not aim to propose a new hierarchy in this paper. Consequently, **Figure 1** serves as a schematic illustration rather than an original proposal. The split in **Figure 1** is effectively the same as the one between the interactional and the propositional structure in Wiltschko (2021: 3). We use a different label to remain neutral with respect to its inner structure and to make a more general point, since our focus in this paper is on diachrony. We will discuss individual syntactic versions and the implications of our diachronic proposal in more detail in Section 5.

Typical lexical exponents of CL projections are the different classes of SAdvS and MP that we focus on in the present paper. While their position is generally assumed to be very high in the tree, they are not restricted to the sentence-initial position on the surface. In English, SAdvS also occur in post-subject, post-auxiliary and sometimes even sentence-final positions. In German, they often occupy the middle field, which leads to a high degree of syntactic ambiguity, as we will discuss in more detail in Section 3. SAdvS (but not MPs) can be topicalized to the pre-verbal position of declarative main clauses in German. This fact is compatible with both an analysis in which elements from PL are moved overtly across CL and one where elements of CL appear

low but are moved covertly into CL and interpreted high. We furthermore adopt the view that MPs are weak SAdvS (Grosz 2007; Cardinaletti 2011; Coniglio 2022), which also unifies the two target categories as weak and strong modifiers in CL.³

This conception of pragmaticalization has several consequences for the diachronic developments we expect to find. Most importantly, we don't expect pragmaticalization to be associated with a single source or a single process. In our proposal, the term *pragmaticalization* accordingly refers to the sum of processes by which elements diachronically end up as conventional parts of CL. This provides a unification criterion for the heterogeneous paths discussed in this paper, namely diachronic development into an expression that is generated in the CL. It includes e.g. the developments of epistemic, evaluative or speech-act modifiers, of pragmatic particles such as *bitte*, *please* and of particles in other languages that mark discourse information such as common ground status or illocution type like the MPs in German. Separating the notion of pragmaticalization from pathways seems unrestricted, such that any expression could end up in CL. We will argue, however, that syntactic ambiguity regulates what could be a possible pathway. Depending on the source and the result, the syntactic and semantic processes contributing to this overall change are different, as will become clearer in the following sections.

This latter point is where our proposal makes different predictions from purely pragmatically driven approaches. In such approaches, syntactic changes would be either unexplained or merely a by-product. The fact that SAdv and MPs have come to occupy different syntactic positions than their sources would have to be a side-effect or a secondary result of their meaning changes. If this were the whole picture, we wouldn't expect any diachronic developments from sources that already have a mainly pragmatic function. As we shall argue however, there are pertinent syntactic developments in expressions that originate in parenthetical or interjection-like material (Pathway II), even though there is no (significant) meaning change in these cases.

While there is often more than one potential source for a new expression, we further expect that for each SAdv/MP we also find a plausible scenario based on syntactic ambiguity, ruling out developments from sources that don't share any syntactic contexts without intermediate steps.

In the following, we will review examples of pragmaticalization focusing on two well-known pathways, namely from the lower to the higher part of the clause and from sentence-external to sentence-internal material, and illustrate for German how they build on syntactic ambiguity. After that we will discuss these pathways with respect to the expectations for our proposal in contrast to previous approaches.

³ See Section 5 for a more detailed explanation.

3 Two developmental pathways and the role of syntactic ambiguity

Since Andersen's (1973) seminal paper on abduction and language change, reanalysis under surface ambiguity has played a central role in generative approaches to grammatical change. The types of pragmatic expressions discussed here, SAdvS and MPs, often have doublets in other categories. In the diachronic literature, this phenomenon is referred to as "heterosemy", defined as cross-categorial polysemy resulting from morphosyntactic and semantic changes (Lichtenberk 1991). Synchronically, it is often possible to find or to construct examples which are ambiguous between categories and interpretations. Such examples provide windows into potential diachronic contexts for reanalysis.

In this section, we will look at two paths that cover a large number, if not the majority of developments for both SAdvS and MPs (cf. Axel-Tober et al. to appear). We will show how the two pathways are generally compatible with the hypothesis of syntactic ambiguity in German. Other pathways would, in principle, also be compatible with this hypothesis as long as they also involve syntactic ambiguity.

- (5) **Pathway I:** Integrated expressions of CL may develop from integrated expressions from PL.
- (6) **Pathway II:** Integrated expressions of CL may develop from parenthetical or interjection-like material that are satellite to the clause.

Pathway I is illustrated schematically in **Figure 2** for a range of expressions that we are going to discuss below, i.e. English *frankly*, German *offensichtlich* 1. 'openly visible'; 2. 'apparently, evidently, obviously', *vil lichte* 1. 'very easily' (Middle High German); 2. 'maybe, perhaps, possibly', *ruhig* 1. 'calm, still'; 2. 'Go on/Don't worry ...' and *bloß* 1. 'merely, only' 2. 'Why on earth...'

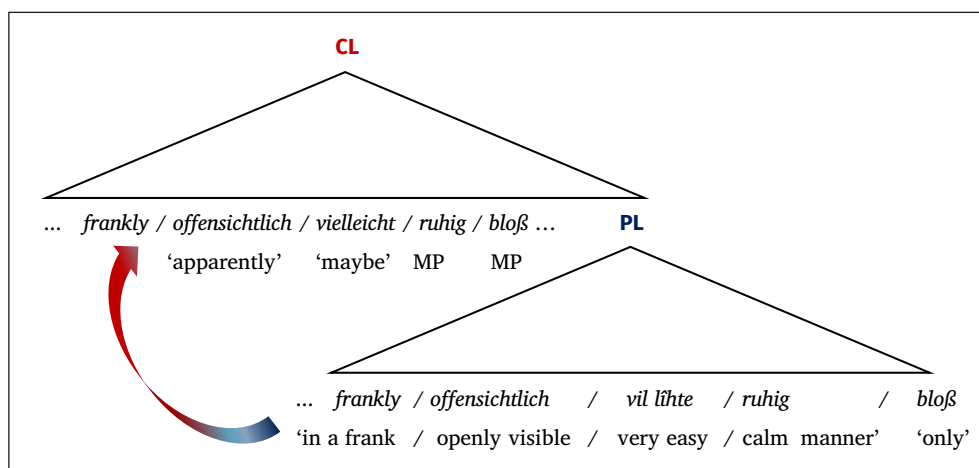


Figure 2: Reanalysis along Pathway I.

Pathway II is schematically represented in **Figure 3**. In this pathway, unintegrated material like parenthetical clauses or interjections are reanalyzed as integrated material that is merged in the functional projections of CL.

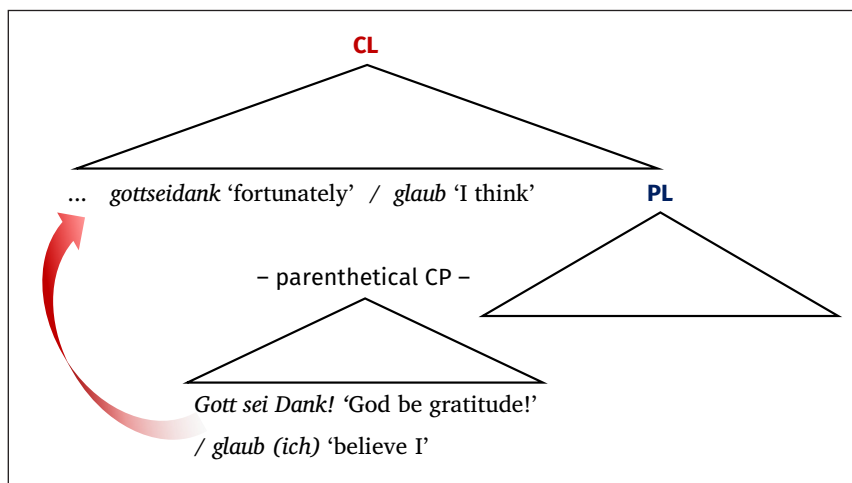


Figure 3: Reanalysis along Pathway II.

While both pathways are radically different and concur only in targeting the CL, we believe for both cases that their starting point was in syntactically ambiguous sentences, in German typically involving an ambiguity in the middle field. Due to the issue of negative evidence, it is difficult to prove that syntactic ambiguity is not merely a catalyzer but a hard restriction for pragmaticalization. What we can expect is that for every pragmaticalized expression – in the sense of pragmaticalization that we propose here – we find a plausible scenario that involves syntactic ambiguity.

In most cases, the reanalyses into projections of CL must have been flanked by recategorizations, sometimes accompanied by reductions and univerbation:⁴ This is particularly evident for Pathway II, where parenthetical CPs (or other types of parenthetical or interjection-like XPs) must have become SAdvS or MPs. For Pathway I, univerbation is not a constitutive ingredient, but also found occasionally. Here, univerbation has e.g. occurred in *vil l hte* > *vielleicht*. *Vil l hte*,

⁴ If we assume that high adverbs are categorically different from lower ones, then recategorization must have happened in all cases, cf. Cinque (1999), who distinguishes his functional adverbs from circumstantial adverbials, or Hetland (1992), who argues that SAdvS constitute a category in their own right.

offensichtlich and *ruhig* must have been recategorized from adjectives in adverbial use to SAdv or MPs, and *bloß* from a focus particle to a modal particle.^{5,6}

Dating the pragmaticalization of individual expressions is not always easy, because pragmaticalized expressions are more prone to occur in oral text types, which is particularly a problem for MPs. Many of the developments discussed below must have taken place relatively recently, in (Early) New High German times. For instance, the data in Axel-Tober & Müller (2017) suggest that several German evidential adverbs have developed in the 17th/18th century. This also seems to hold for evaluative adverbs. *Bitte*, *scheints* and *glaub* seem to be even more recent, as we will show in section 3.2.

3.1 Pathway I

3.1.1 Sentence adverbs

In their synchronic cross-linguistic survey on SAdv in the languages in Europe, Ramat & Ricca (1998) identify two major structural types based on adjectives. Today, these SAdv are either marked by means of a derivational affix (e.g. English *-ly*, Italian *-mente* or Finnish *-sti*) or do not carry a derivational adverbializing morpheme and are thus either analyzed as (adverbial) adjectives or as adverbs with a silent derivational suffix (e.g. Dutch *gelukkig* ‘luckily’ or German *offensichtlich* ‘obviously, evidently’). In both cases, the adverbs or adjectives diachronically showed first predicate-related adverbial uses before they developed into SAdv (e.g. Swan 1988; Traugott 1989; Axel-Tober & Müller 2017). In other words, they had concrete, lexical meanings originally, in particular manner readings: e.g. *frankly* ‘in an open/frank way’, *gelukkig* ‘in a lucky/fortunate way’ or *offensichtlich* ‘in an openly visible way’.

Synchronically, Ramat & Ricca (1998: 206) find that most subclasses of SAdv, notably speech-act adverbs, evaluatives (with participant orientation, e.g. *wisely*) and domain adverbs (e.g. *logically*) are still employed as predicate adverbs. Accordingly, the English word string with *frankly* in (7) is syntactically ambiguous: both the predicate-related adverb and the SAdv can appear in a clause-final position. Prosodically, there is a difference: the SAdv would be realized as prosodically detached. In written texts, it would arguably be separated from the host clause by comma punctuation.

⁵ As a reviewer notes, *nur* is also the result of a univerbation, cf. Old High German *ni wâri* ‘would it not be’. However, this process was not part of its pragmaticalization into a MP and must have taken place before. The development of *nur* arguably involved two steps: *Ni wâri* first developed into a focus particle (including univerbation). The focus particle then underwent pragmaticalization into an MP. A polyfunctionality between focus particles and MPs has also been observed for other languages (König 1991: 165). Cf. also our discussion of *bloß* in Section 3.2.4.

⁶ The target items that belong to different subclasses of SAdv have retained their phrasal status. For those that are MPs (*ruhig* and *bloß* in Figure 2), it is still discussed controversially in the synchronic literature whether these are phrases or heads (cf. Bayer & Obenauer 2011 for a head analysis).

- (7) You should speak to your doctor, **frankly**.

In German, one can even construct and find natural examples which are fully ambiguous also in spoken language. This is especially true for epistemic and evidential adverbs. Axel-Tober & Müller (2017) discuss the case of German *offensichtlich* and *offenbar*. In modern German, *offensichtlich* is still sometimes used as an adjective. In its adverbial predicate-related use, it has the meaning ‘in an open, obvious way’. This is the diachronic source of the homonymous lexicalized SADv.

In historical corpus examples, (8), and sporadically still in modern German, cf. (9),⁷ it is sometimes hard to tell which reading was intended by the speaker/writer.

- (8) diejenigen Rechte, die [...] **offensichtlich** verletzt oder gefährdet werden.
 those rights which openly hurt or endangered are
Low Reading: ‘those rights that are violated or endangered in a blatant manner’
SADv Reading: ‘those rights that are – as is obvious – violated or endangered’
 (Liszt, Franz von: Das Völkerrecht. Berlin, 1898; DTA; adapted from Axel-Tober & Müller 2017: 15, ex. 6)
- (9) Acht Badminton-Spielerinnen wurden wegen Betrugs vom Turnier ausgeschlossen,
 ‘Eight badminton players have been excluded from the tournament for cheating,’
 weil sie **offensichtlich** versuchten ihre Spiele absichtlich zu verlieren
 because they openly / SADv tried their matches intentionally to lose
Low reading: ‘Eight badminton players were excluded from the tournament for cheating
 because they were trying blatantly to lose their matches on purpose.’
SADv Reading: ‘Eight badminton players were excluded from the tournament for cheating
 because they were obviously trying to lose their matches on purpose.’

The Germanic epistemic adverb *vielleicht* has been univerbated from a complex expression where the adjectival adverb *lihte* ‘easily’ was intensified by the particle *vil* ‘very’. Example in (10) from the Rheinau prayers, an Alemannic collection of prayers from the second half of the 12th century, already shows a sentence with *vil lihte* in the middle field and the modal *mugen* ‘can, may’. In examples of this type, both a predicate-related or an epistemic interpretation is feasible.⁸

- (10) daz die **fil lihte** mac vbir winden daz vnreine fleis [...]
 and she very easily may over come the impure flesh
Low reading: “that she may overcome very easily the impure flesh”
SADv reading: “that she may perhaps/possibly overcome the impure flesh”
 (Rheinau prayers; adapted from ReM)

⁷ Example (9) was found by the authors in a version of an article from SPIEGEL online (<https://www.spiegel.de/sport/sonst/olympia-2012-badminton-spieler-sollen-absichtlich-verloren-haben-a-847604.html>), which was published at the gmx-platform on 08/02/2021. Unfortunately, the gmx-version is no longer accessible.

⁸ Further research is needed to show when the first unambiguous examples of the epistemic adverb begin to be attested.

As mentioned, the older predicate-related uses typically conveyed a kind of manner interpretation ‘in an X way’. In several Germanic sentences there is a derivational suffix (German *-(er)weise*, Swiss German *-(er)wiis*, Dutch *-(er)wijs*, Danish, Swedish *-vis*) which etymologically goes back to a noun with the meaning ‘appearance, looks, mode, shape, manner’ that is ultimately derived from the Indo-European root **ueid-* ‘catch sight of, see’. The suffix developed from parts of adverbial DPs in genitive case, particularly from the genitive inflection *-er* on the adjective and the noun (= *Weise* in German).

- (11) ... weil uns GOTT **wunderbarer Weise** hierher geführt hat.
 because us god miraculous.gen manner.gen here led has
Low reading: ‘because god led us here in a miraculous manner’
SAdv reading: ‘because god miraculously led us here’
 (Schnabel: Wunderliche Fata einiger See-Fahrer, 1739; DTA)

Paradoxically, even though this meaning is still transparent to most speakers of the respective languages, the suffix can no longer be productively used in this original meaning with adjectival bases. It has developed into “specialized morphology for sentence adverbs” (Ramat & Ricca 1998: 203).

Interpretatively, the two structures are very close, Axel-Tober & Müller (2017) argue for *offensichtlich* that the original meaning often gives rise to an evidential inference: If y has done x in an obvious way, it is also usually obvious to the speaker that x has done y. This applies similarly to epistemic and evaluative expressions: if something can be done very easily, then it is very easily thinkable that it would be done, and if something happens in a miraculous way, it is a reasonable – but defeasible – inference that the whole affair is miraculous. By contrast, in the English example in (7) *frankly* has two different interpretations (‘in an open/frank way’ or ‘frankly speaking’). Even though these readings are clearly distinct, in many contexts both interpretations could make sense.

In the German middle field, sentence adverbials are merged in a higher structural position than adjectival manner adverbials where they c-command the base positions of *all* adverbial adjuncts, of the verbal arguments and of the finite verb. (Frey & Pittner 1998). In (9), the object is realized as an infinitival clause (= *ihre Spiele absichtlich zu verlieren*) and occurs external to the middle field in extraposed position as it is typical for clausal material. The subject (= *sie*) is an unstressed pronoun that has moved leftward into the so-called Wackernagel domain (Haider 2010: Ch. 4). There are also no further adverbials. Therefore, it is not visible on the surface whether *offensichtlich* is in a structurally low or high position. The same situation could arise in sentences with intransitive verbs, of course. Furthermore, even with transitive verbs, the structural positionings of manner adverbials and direct objects may be obscured by leftward movements such as scrambling or middle-field internal topicalization (Haider 2010: Ch. 4). This way, in many constellations, a sentence adverbial can show up relatively late in the middle field, notably also in the same surface position as a manner adverbial.

3.1.2 Modal particles

As is well-known, German is a language which has a rich inventory of a specific type of expressions with subjective or discourse-related meanings, namely the MPs (e.g. *doch*, *denn*, *ja*, *eben*, *bloß*). The meaning contribution of MPs is difficult to paraphrase, a property which is called “ineffability” of meaning in the particle literature.

In the case of MPs, we can also hypothesize that ambiguity played a crucial role in their development.⁹ It is still possible for a subset of particles to construct examples which are ambiguous.¹⁰ In the case of German *ruhig*, for example, we can assume that it goes back to an adjective in adverbial use.¹¹ Out of the blue, sentence (12) is ambiguous between a manner-adverbial and modal-particle use of *ruhig*. Since there is no further middle-field material present, there is a string ambiguity between the potentially low, VP-related position of the manner adverbial and the high, CL-domain related position of the MP.

- (12) Es ist nicht gut, wenn es beispielsweise heißt: ‘Bleib **ruhig** sitzen!’
 It is not good when it for.example says remain calmly/MP sit
 Gegen diese Krankheit kann man nur ankämpfen, wenn man sich bewegt.
 Against this disease can one only fight when one REFL moves
 ‘It’s not good when people say, for example:’
Low reading: ‘Sit still’
MP reading: ‘Don’t worry, remain seated.’
 ‘...You can only fight against this disease by moving around.’
 (L13/JAN.02554 Berliner Morgenpost, 20.01.2013; DeReKo)

As a result, *ruhig* with the older meaning and *ruhig* with the new MP-meaning can occur adjacent to each other in the same sentence:

- (13) So eine Turniersaison ist ja recht facettenreich, und so muss auch das Lied sein, [...] ‘Such a tournament season is quite multifaceted, and that’s how the song should be’
 Es kann **ruhig ruhig** anfangen [...] it can MP calmly begin
 ‘It can begin calmly’
 (<https://www.gutefrage.net/frage/musik-fuer-ganz-besondere-momente>)

⁹ Their diachronic developments have been argued to meet (some of) the criteria for grammaticalization by Lehmann (1995), (e.g. Abraham 1991; Autenrieth 2002; Diwald 2011). See Section 4 below for further discussion; cf. Hentschel (1986) for a general account of their history.

¹⁰ The relevant diachronic data are hard to come by as MPs are typical for spoken language and require special types of illocutionary acts to occur.

¹¹ In fact, the source could also be secondary predicate. Secondary predicates and manner adverbials are both uninflected in German, and they are not easy to distinguish semantically in all cases. Since both are string ambiguous, syntactically located in the lower domain of the clause and semantically close, this issue does not bear on the argument made here.

Similarly, *wieder* in (14) can either be an adverb with a repetitive reading or a modal particle of the remind-me type (see Pittner 2009) (cf. also Sauerland & Yatsushiro 2017 on English *again*).

- (14) Wer war **wieder** dran?
 who was again/MP next
Low reading: ‘Whose turn was it again (= next)?’
MP reading: ‘Remind me, whose turn was it?’

MPs have been shown to be merged in the left-ward region of the middle field. In this, they behave similarly to SAdvS in the middle field. In sentences with scrambling or middle-field-internal topicalization of arguments or in sentences with almost ‘empty’ middle fields as we frequently get them with intransitive verbs or copular constructions as in (13) and (14), respectively, MPs and lower adverbials show up in the same surface positions giving rise to string ambiguity.

As mentioned above, many MPs seem to go back to focus particles. Synchronically, there are still many doublets in focus particles. In German, e.g. the particles *bloß*, *nur*, *schon* are polyfunctional. If we take an original example out of context, like in (15), it is easily ambiguous (cf. also Dörre et al. 2018 for experimental studies on items with this type of polyfunctionality).

- (15) warum hast du **bloß** das Auto verkauft?
 why have you only//MP the car sold
FP reading: ‘Why did you only sell the car?’
MP reading: ‘Why on earth did you sell the car?’
 (RHZ97/MAI.16087 Rhein-Zeitung, 27.05.1997; DeReKo)

In (15), the focus particle *bloß* associates with a DP in the middle field (= *das Auto*) and ends up in the same surface position as the CL-related MP as there is not enough further material in the middle field.¹² Interpretatively, the focus-particle and MP readings in (15) are different, exclusive particles like *bloß* even affect truth conditions (Krifka 2008). It is, however, easy to envisage contexts in which both readings would make sense and this fact, together with syntactic string ambiguity, may have enabled the diachronic reanalyses of certain focus particles into MPs.

While Coniglio (2022) derives MPs exclusively from adverbs, nothing in our proposal would motivate such a restriction.¹³ As we have seen, in German, the syntactic configurations with a potential surface ambiguity between a SAdv or MP on the one hand and a manner adverbial,

¹² The syntactic analysis of focus particles is highly controversial, but it has been observed for German that they syntactically associate with different types of phrases. Sudhoff (2010) suggests cases in which focus particles are used as VP-adjuncts in parallel to adverbials, which would constitute another possible context for reanalysis. This syntactic flexibility is an ideal precondition for string ambiguity.

¹³ Cf. also Axel-Tober et al. (to appear), who only consider lower adverbials.

other type of lower modifier or focus particle on the other are manifold. It could be objected that the syntactic preconditions for surface ambiguity are quite specific (e.g. operations such as scrambling or *Wackernagel* movement). This does not fit to the observation that Pathway I has wider cross-linguistic significance. It should be noted, however, that ambiguous word orders might also result from other types of syntactic operations.¹⁴

3.2 Pathway II

We argue that string ambiguity has also enabled developments along Pathway II. It is widely known that parentheticals, notably clausal parentheticals, are quite flexible regarding their positionings. In German, they can occur at the left periphery in a parenthetical niche after the prefield constituent, in various niches in the middle field and at the end of the clause, in the post field (Reis 2002). Crucially, in the middle field they may appear in the same surface position as SAdvS or MPs (including *glaub*), cf. (16a) and (16b).

- (16) a. Gestern haben sie (, **scheint es**,) (, **glaub ich**,) endlich die Straße geräumt.
 yesterday have they seems it believe I finally the street cleared
 ‘Yesterday, they finally cleared the street, it seems/I think.’
- b. Gestern haben sie **anscheinend** / **glaub** / **doch** endlich die Straße geräumt.
 yesterday have they apparently MP MP finally the street cleared

Note also that parentheticals with verb-first order can be prosodically integrated in spoken language. Such integrated parentheticals (Reis 2002; Viesel 2011) are not detached from the host utterance via pauses and they do not show a separate focus background structure. So, in these cases, the parentheticals and adverbs/particles do not even differ in their prosodic realizations.

As for *scheinen*, uses as a verb-first parenthetical with a post-verbal expletive *es* (often cliticized to ‘s)¹⁵ are attested in DTA texts from the 19th century onwards. In these written attestations, the expression typically occurs in the middle field and is detached from the host by commas or dashes, cf. (17a). In a 19th century fictional text which contains dialogue mimicking Alemannic speech patterns, also examples without such parenthetical punctuation are attested suggesting prosodic integration, (17b).¹⁶

- (17) a. “Ja, -- Du hascht em, **scheint’s**, sei Guthabe hintrage solle?
 yes you have him seems.it his credit bring should
 ‘Yes – you have brought him his credit, it seems?’
 (Frapan, Ilse: Bittersüß. Novellen. Berlin, 1891; DTA)

¹⁴ Also, middle-field phenomena such as scrambling might have been active in historical stages of languages that no longer show them. English used to have OV properties and a middle field with types of leftward movements similar to German.

¹⁵ *Scheinen* is a raising verb like English *seem*.

¹⁶ Cf. also Axel-Tober (2016) for examples from 20th newspapers.

- b. -- descht **scheint's** e dumme G'schicht mit dem Schmied?
 that.is seems.it a stupid story with the blacksmith
 'It seems like a stupid story with the blacksmith?'
 (Frapan, Ilse: Bittersüß. Novellen. Berlin, 1891; DTA)

In summary, we find evidence that the proposed reanalyses have taken place in contexts of syntactic ambiguity.

3.2.1 Epistemic and evidential adverbs

In their empirical study on European languages Ramat & Ricca (1998) show that clausal parentheticals are important sources for SAdvS, notably for evidential and epistemic adverbs, cf. (18). They have classified these items under the label “univerbations from clauses”.¹⁷ In their survey, this is the most important subtype of SAdvS that are not built on derivational markers (like *-(er)weise* etc.).

- (18) Latvian *varbūt*, Lithuanian *galbūt*, French *peut-être*, Catalan *potser*, English *maybe*, Slovenian *morebiti*, Estonian *võib-olla* etc., all ‘perhaps’ from ‘can be’; Lithuanian *turbūt* ‘probably’ from ‘must be’; Dutch *misschien* (< *mach scien*), Danish *måske*, Norwegian *kanskje*, all meaning ‘perhaps’ from ‘it may/can happen’; Spanish *quizá* (and Portugese *quiça*, now obsolete) ‘perhaps’ from ‘who knows’, Albanian *kush-e-di* from ‘who’ + ‘it’ + ‘knows’; Breton *moarvad* ‘probably’ from *me aoar vad* ‘I know well’; Latin *forsit* ‘perhaps’ < *fors sit* ‘be the chance’; Swiss German *schiints* (also spoken German *scheints*) ‘apparently’ from ‘seems-it’, Finnish *kuulemma* ‘reportedly’ from ‘hear-I’, *näemmä* ‘apparently’ from ‘see-I’.

(adapted from Ramat & Ricca 1998: 232f.)

Even though the authors use the label “univerbated from main clauses” for these cases, they acknowledge that a parenthetical origin is also possible:

the most frequent subtype of nonderivational formation for sentence adverbs, judging from our material) [sic] could come both from a main clause and a parenthetical clause. Only in rare cases, when main and parenthetical clauses differ in their syntax, could this etymological ambiguity be solved. (Ramat & Ricca 1998: 233).

More recent research has provided further evidence for parenthetical origins. As mentioned, the evidential adverb *scheints* goes back to the verb-first parenthetical *scheint es* ‘seems it’. English *maybe* has been traditionally traced back to a main-clause construction (cf. Thompson & Mulac 1991), but recently López-Couso & Méndez-Naya (2016) provide corpus data showing that the

¹⁷ In a further subtype of ‘univerbations from clauses’, the SAdvS contain (reflexes of) a complementizer (Ramat & Ricca 1998). This subtype is, however, much less frequent than the one exemplified in (18).

adverb was downgraded from a bare parenthetical *it may be*. Similarly, Beijering & Norde (2019) point out for Swedish *kanske* ‘possibly’ that there were also parenthetical uses as in (19) in addition to matrix-subordinate constructions.

- (19) Deras offer får man, **kan ske**, ej taga något skäl utaf (...) [1747]
 Their sacrifice should one, can happen, not take some reason of
 ‘Their sacrifice cannot be used as an argument (...)’
 (Beijering & Norde 2019: 97)

López-Couso & Méndez-Naya (2016: 170) furthermore list several studies that argue that expressions like ‘I think’, ‘I believe’, ‘I know’ go back to adverbial parentheticals “[e]ven though the matrix clause hypothesis has often been taken for granted”. The Finnish adverbs *kuulemma* (< *kuulen mä* ‘hear’) and *näemmä* (< *näen mä* ‘see’), must be derived from parentheticals due to “their verb-subject syntax, which in both languages is typical of parentheticals, but not of main clauses” (Ramat & Ricca 1998: 233).

While we have argued for German that the most likely locus of reanalysis was the middle field in most cases, English parentheticals also share the sentence-final position with some sentence adverbs, as illustrated in (20).

- (20) It’s not going to happen overnight, **presumably/probably/I think/I believe**.

3.2.2 Evaluative adverbs

Even though epistemic and evidential adverbs seem to be the most important subtype of SAdvS with parenthetical origins, parentheticals also play a role in the domain of evaluatives. For example, the evaluative expression *thank God* is listed as an “interjection” in Peltola’s (1982/1983: 103ff.) typology of English ‘comment clauses’. By contrast, the German expressions *gottlob* or *Gott sei Dank* convey similar meanings but are often written without commas or dashes. This suggests that these expressions are lexicalized and “syntacticized” SAdvS even though they are diachronically derived from parenthetical clauses. The most important indication of this is that they can occur in the SpecCP/prefield-position on their own, cf. (21). In German with its strict verb-second grammar, the so-called *prefield* can only be constituted by syntactically and prosodically integrated material and not by parentheticals (Reis 2002).

- (21) a. **Gottseidank** ging bei allen der Fallschirm auf
 God.be.gratitude went with all the parachute up
 ‘Thankfully, everyone’s parachute went up’
 b. **Gottlob** rauchst du nicht auch noch.
 God.praise smoke you not also on.top.of.that
 ‘Thank God, you don’t smoke as well.’
 (Hannoversche Allgemeine, 30.10.2007; DeReKo)

Gottseidank still has all its clausal components including the verb *sei* (Heische mood of ‘to be’) and its literal meaning (= ‘God-DAT be gratitude’ = ‘gratitude be to God’) is still transparent. In *gottlob* (< *God sei Lob* ‘God-DAT be praise’) the Heische-verb has been elided. In the historical examples in (22), the clausal nature of both expressions is indicated by the separated spelling and their parenthetical nature by the use of parentheses. In Present Day German, *gottlob* shows unverbated spelling in standard orthography, whereas with *gottseidank* unverbated spelling is frequently used, but does not yet conform to the orthographical norm.

- (22) a. Jch [...] habe meinen Pferden [...] Fütter geben lassen / und hat ihnen
 I have my horses food give let and has them
(Gott sey Danck) allzeit wol angeschlagen
 God be gratitude always well done
 ‘I had my horses fed and it has, thank God, done them good all the time.’
 (Hohberg, Wolf Helmhard von: *Georgica Curiosa*. Bd. 2. Nürnberg, 1682; DTA)
- b. Noch verwundeten sie mich **(Gott lob)** nit mehr /
 nor wounded they me God praise not more
 ‘they did not wound me, thank God, anymore.’
 (Staden Hans: *Warhaftige Historia* [...]. Marburg, 1557; DTA)

In German, there must have been profound diachronic changes with these types of expressions, while for English this is less clear. In English, there is less evidence for a syntacticization. As mentioned above, the lexicalized targets generally still show parenthetical or, in the case of *thank God*, even interjection-like characteristics. The same is true for epistemic expressions like *I think*, *you know*, whose syntactic freedom is often highlighted in the literature. It is nevertheless important to acknowledge that in English sentence-internal material is difficult to distinguish from sentence-external material like parentheticals. Consequently, the final developmental step may be missed, namely integration into the sentence. This is why German as a verb-second language provides an ideal testbed. Here, we can often observe a change towards syntactic and prosodic integration. What is again important to note, however, is that the syntactic changes are not accompanied by profound meaning changes toward subjectivity. Evaluatives like *gottseidank* or *gottlob* have not become more subjective and, if anything, seem to be less expressive than their sentential sources *Gott sei Dank!* / *Gott (sei) Lob!*, which are typically used as exclamation.

3.2.3 Speech-act modifiers

Many languages possess lexicalized SAdvS with speech-act related meaning components. Some of them seem to make only reference to the speech act like English *frankly*, others are hearer/speaker-related (e.g. *briefly*, *seriously*, *confidentially*). In the survey by Ramat & Ricca (1998), members of the class of speech-act adverbs are often homonymous with predicate-related adverbs. In German, there is less homonymy/polyfunctionality and speech-act modifiers often

convey explicit reference to the speech act by means of e.g. the participle of a *verbum dicendi* as in *ehrlich/offen gesagt* ‘honestly/frankly spoken’, *offen gestanden* ‘openly admitted, frankly’. In modern German, the lexicalized expression *offen gestanden* is largely fixed in wording. It marginally allows for a modification by an intensifying particle (*ganz offen gestanden* ‘quite openly admitted’), but the indirect object of *gestehen* ‘admit’ cannot be realized (**dir/Ihnen offen gestanden* ‘you-DAT openly admitted’).

In modern German, speech-act adverbials are the only subclass of sentence adverbials that can still systematically occur in a peripheral position to the left of the prefield. Most expressions can also be placed in the prefield just like the other types of SAdvS (Pittner 2000; cf. Meinunger 2006 for a detailed discussion). It is not entirely clear whether this integrated use has diachronically developed from host-internal parentheticals or from the left-peripheral use. The following examples from 19th century newspapers illustrate both these constructions:

- (23) a. Jch verspreche mir -- **offen gestanden** -- wenig davon.
 I promise me open admitted little of.it
 ‘Frankly, I don’t expect much of it’
 (Die Bayerische Presse, 1850; DTA)
- b. **Offen gestanden**, wir waren überrascht von dieser Verfassung.
 open admitted we were surprised of this constitution
 ‘Franky, we were surprised by this constitution.’
 (Neue Rheinische Zeitung, 1848; DTA)

What both potential origins have in common is that they illustrate a tendency for German to syntactically integrate formerly non-integrated material either from clause-internal parenthetical positions or from loosely attached material at the left periphery. Other examples of the latter type may be found in the still ongoing development of pragmatic expressions derived from expressive interjections. For example, the expression *na klar(o)!* ‘of course’ is an interjection that is common in informal language by younger speakers.¹⁸ Some speakers already allow for integrated uses, cf. (24), where *na klaro* occurs in the prefield.

- (24) **Na klaro** sind wir alle verdammt neidisch auf dich.
 INJ are we all damn jealous of you
 ‘Of course we’re all damn jealous of you’
 (Honeymoon mit mir, Henriette Frädrich 2015, via google books)

This suggests that the expression has undergone some form of “adverbialization”.¹⁹

¹⁸ *Na klaro* is actually a lexicalized interjection of two items that can also be used as interjections on their own: *na* and *klaro* (< *klar* = adjective ‘clear’).

¹⁹ Cf. Ørsnes (2023) for *klar*, who proposes a scenario where the ambiguity lies in the recovery of elided material. Lack of space prohibits us from discussing this in more detail here.

3.2.4 Modal particles

As mentioned above, in German there are uninflected expressions with epistemic or discourse-related meanings that cannot be placed in the prefield but are restricted to the middle field. Items with these characteristics (and further properties such as sentence-type sensitivity etc.) are not generally referred to as SAdvS but classified as MPs. Most German MPs do not go back to parenthetical clauses, but have developed along Pathway I, as described in Section 3.1.2. However, there are two expressions with parenthetical origins that have recently been argued to be MPs, namely *glaub* and *bitte*.

As Viesel (2011) demonstrates, *glaub*, which is frequently used in colloquial German, notably in southern regions, has some typical features of a MP.²⁰ *Glaub* cannot be stressed or coordinated and only occurs in the middle field. It is only used in declarative clauses as in (25a) and is ungrammatical in interrogatives, cf. (25b), or imperatives.

- (25) a. jetzt hat er **glaub** auch schon den kopf verputzt
 now has he MP also already the head devoured
 ‘Now he’s already devoured the head, I think.’
 (internet example; Viesel 2011, ex. 85d; glosses and translation added)
- b. *Hat er **glaub** den Kopf verputzt?
 has he MP the head devoured
 ‘Has he devoured the head?’
 (Viesel 2011, ex. 86g; translation added)

Interpretatively, *glaub* conveys a subjective epistemic speaker assessment and is thus functionally closer to SAdvS such as *vielleicht* ‘perhaps’ or *vermutlich* ‘presumably’. Diachronically, *glaub* goes back to the parenthetical verb-first clause *glaub’ ich* ‘believe I’, which is still frequently used notably in colloquial language. Like in the case of adverbs derived from parenthetical clauses, there must have been a syntactic reanalysis of the parenthetical CP into a matrix-internal, integrated element accompanied by a recategorization (here: from CP > MP).²¹ The target item shows clear signs of integration. The particle no longer constitutes a separate tone unit and is positionally fixed to a left-peripheral position in the middle field (Viesel 2011). In contrast to clear parenthetical clauses as in (26a), we find that the particle *glaub* cannot be placed in the parenthetical niche after the prefield constituent and before the finite verb, cf. (26b).

²⁰ In Afrikaans, *glo*, a cognate of *glaub*, shows similar uses. It has been hypothesized to have developed from a main clause *ek glo* ‘I believe/think’ (Boye & Harder 2012) or from a parenthetical *glo’k* > *glo ek* (Thompson & Mulac 1991).

²¹ While the elision of the inflectional *-e* in the first person singular is typical for colloquial German, the drop of the first person singular subject pronoun is only grammatical in some dialects. Viesel (2011) argues that the grammaticalization process from *glaub ich* to *glaub* is characterized by univerbation of the verb and the pronoun and a subsequent loss of the latter.

- (26) a. Leider – **glaube ich / soweit ich weiß** – war niemand gekommen.
 unfortunately believe I as.far.as I know was nobody come
- b. *Leider **glaub** war niemand gekommen.
 unfortunately MP was nobody come
 ‘Unfortunately, no one came, I believe.’

A further case in point is German *bitte* ‘please’. In some reference grammars and dictionaries this item is classified as a MP, even though it allows for isolated uses, which is atypical for this class. In recent formal accounts, its English counterpart *please* has been discussed as the overt head of a speech-act phrase (cf. Woods 2016).

It is uncontroversial that *bitte* is of clausal origin as it consists of the first person singular form of the verb *bitten* ‘to beg’. Ackermann (2023) derives it from a matrix clause with verb-second order (*ich bitte*) with subsequent drop of the subject pronoun. A development from a verb-first parenthetic (*bitte ich* ‘beg I’) is also possible. This would parallelize this case with *glaub* and *scheints* (cf. also Ramat & Ricca 1998 on SAdvS going back to parentheticals with verb-subject syntax). In example (27) from the 17th century, the verb-first clause is placed within the domain of the middle field but separated by virgules, indicating its parenthetical use.

- (27) aber eure Liebe erinnern sich / **bitte ich** / was jener hochehrfahrene
 but your love remember REFL beg I what that highly.experienced
 Sternseher vor etlichen Jahren von ihm geweissaget hat
 star.seer before several years of him prophesied has
 ‘but your love, I beg you, remember what that highly experienced star-seer prophesied
 of him several years ago.’
 (Bucholtz, Andreas Heinrich: Des Christlichen Teutschen Groß-Fürsten Herkules [...] Wunder-Geschichte, 1659; DTA)

Like *glaub*, *bitte* has been subject to syntactic and prosodic integration. Both expressions arguably go back to clausal parentheticals with first person singular verbs. On an interpretative level, the two particles are very different. While *glaub* conveys an epistemic stance of the speaker, *bitte* signals a request to the addressee.

Now we will turn to the question of how the two pathways fit into the theoretical discussion.

4 A comparison of different approaches to pragmaticalization phenomena in the two pathways

4.1 Grammaticalization, subjectification, and pragmaticalization

In the diachronic literature, the notion of pragmaticalization has been introduced against the backdrop of at least two diachronic processes, namely grammaticalization and subjectification

(cf. also Winter-Froemel 2014). It is controversial to which extent these notions can account for the phenomena in Pathways I and II that we discuss in this paper.

4.1.1 Grammaticalization and pragmaticalization

In Lehmann's (1995) influential morphologically-oriented approach, grammaticalization is defined in terms of processes that affect a linguistic sign with respect to its weight, cohesion and variability – both from a paradigmatic and syntagmatic point of view. Accordingly, in a typical case of grammaticalization six processes go together, namely loss of phonological and semantic integrity (“attrition”), paradigmaticization, obligatorification, decrease of scope/condensation, fixation, and coalescence.²²

There is no agreement about whether pragmaticalization should be regarded as a subtype of grammaticalization (Wischer 2000; Diewald 2011) or not (e.g. Aijmer 1997; Norde 2009). It has been noted that pragmaticalization supposedly differs from grammaticalization in various respects, including optionality, no decrease in scope, and the high degree of syntactic freedom resulting from an apparent lack of fixation and fusion (see Heine 2013).

Our examples for Pathway II show some features of grammaticalization: e.g. some kind of phonological reduction in *glaub* < *ich glaub(e)* and *Gott Lob* < *Gott sei Lob*, univerbation in *gottseidank* < *Gott sei Dank*, and *gottlob* < *Gott Lob*, fixation in syntactic position as compared to their parenthetical sources and arguably some kind of “decategorialization” in that the expressions lose some features related to their clausal origin (e.g. finiteness etc.). For Pathway I, we find univerbation in the cases of *vielleicht* < *vil lîte*, *offensichtlich* < *offen sichtlich*, but rarely any phonological reduction. Particularly in the case of *-(er)weise* adverbs, fusion has taken place before pragmaticalization.²³

As to the criterion of scope condensation, the developments along Pathway I show an increase in scope, rather than a decrease. It should be noted that this criterion has also been critically discussed in grammaticalization theory (e.g. Nordlinger & Traugott 1997). Generative accounts of grammaticalization seem to typically involve increase of scope (cf. “upward reanalysis” Roberts & Roussou 2003; “up the tree” van Gelderen 2004).

In contrast to fully grammaticalized markers of grammatical categories, SAdvS and MPs are also typically not obligatory: you can have an emotional attitude towards what you are saying or be honest about it without mentioning it. Evidentiality is a category that has been argued to be obligatory in a fair number of languages (Aikhenvald 2004), but it is not in English or German.

²² Other grammaticalization researchers posit related and complementary mechanisms. Notably Heine & Kuteva (2002) claim that grammaticalization parameters can be reduced to extension/context generalization, desemanticization, decategorialization and phonetic erosion and take other mechanisms (e.g. obligatorification) as secondary or derivative of these.

²³ See also fn. 5 for *nur*.

In contexts where German speakers have acquired their evidence through inference or report, it is possible to use an evidential adverb or an evidential/epistemic verb, but this by no means obligatory:²⁴

- (28) *Context: You see a wet street. / Someone told you that it has rained.*
 Es hat (**offenbar**) geregnet (, **glaube/hörte ich**).
 ‘(Apparently), it has rained, (I think/heard).’

The same holds for MPs.²⁵ In (29), speaker B can answer A’s question either with or without the MP *doch*, which conveys here that the fact that A is asking conflicts with what B assumes to be shared knowledge.

- (29) A: Wann kommt Anna?
 ‘When is Anna coming?’
 B: Anna ist (**doch**) schon da.
 ‘(But) Anna is already here.’

In parts of the literature, MPs have been considered as grammaticalized elements in the sense that they are sentence type markers (Diewald 1997), since they are typically sensitive to sentence type. They canonically are unable to bear stress, *denn* can also be cliticized (e.g. > ‘n, cf. Bayer & Obenauer 2011). MPs cannot be coordinated or questioned. Since many MPs ultimately diachronically go back to categories that do not show these restrictions (e.g. to adverbs like *denn* < *dann* ‘then’ or to adjectives like *eben* < *eben* ‘flat, even’) (Abraham 1991; Burkhardt 1994), it has been argued that they have undergone the processes of fixation and some phonological reduction. With reference to the particles *denn* and *eben*, Abraham (1991: 370) assumes “localistic > temporal > logical > illocutive / discourse functional” as a typical pathway with step-by-step meaning shifts. However, the diachronic and synchronic shift from spatial to temporal meaning is one of the most pervasive conceptual metaphors and by now means restricted to grammaticalization developments. It should also be noted that for *eben*, diachronic investigations have clearly shown that the MP has evolved from the focus particle and not directly from the temporal adverb (Autenrieth 2002), a development which we have also posited for *bloß* in Section 3.2.4. Such developments could be seen as further steps in an increasing “process from abstraction of a lexical source” (Abraham 1991), however this is arguably a too broad analysis:

²⁴ One might disagree on what it means for an element to be obligatory. For example, one might argue that if a speaker is unsure of certain information, they must mark this. But there are multiple ways with different syntactic constructions to do so. For example, it is not possible to randomly replace past tense with an adverb in English as in (i) (cf. Chinese, which doesn’t have grammatical tense).

(i) *Last year, I go skydiving in Mexico.

²⁵ Cf. Grosz (2014) for MPs in optatives.

abstraction also affects lexical material that does not turn into grammatical or pragmatic markers. Also, an intermediate step with a more abstract meaning (i.e. ‘logical’) does not seem to be a necessary component in the development of MPs. The German MP *ruhig*, for example, seems to have developed directly from the adverbial adjective with the meaning ‘in a calm manner’. In formal accounts, grammaticalization involves the development of an XP into a functional head (cf. Petrova 2017 for such a diachronic analysis of German MPs). MPs have been analyzed as functional heads by e.g. Bayer & Obenauer (2011), but this analysis is highly controversial (cf. Thoma 2016 and Meinunger 2022 for recent discussions). For instance, if MPs were heads along the functional verbal spine, we would expect them to block V-to-C head movement of the verb. We assume with Grosz (2007) that syntactic and prosodic restrictions in MPs are rather due to their status as weak (sentence) adverbs.²⁶ For SAdvs, it is uncontroversial that they are phrasal. Therefore, we can assume that, while the elements in question may have changed category, they have retained their XP status.

4.1.2 Subjectification and pragmaticalization

Subjectification has been described as a semantico-pragmatic process with the dominant tendency: “Meanings tend to become increasingly based in the speaker’s subjective belief state / attitude towards the proposition” (p. 35). More recently, Traugott & Dasher (2002: 30) define subjectification as “the semasiological process whereby SP/Ws [speakers/writers] come over time to develop meanings for Ls [lexemes] that encode or externalize their perspectives and attitudes as constrained by the communicative world of the speech event, rather than by the so-called “real-world” characteristics of the event or situation referred.” Traugott and many other scholars grammatical semantic change to be driven by pragmatics and e.g. suggest that the starting point is the strengthening of pragmatic inferences (Traugott 2010: 41). Even though subjectification is also found in pure lexical change (e.g. in the emergence of expressive adjectives like in *this bloody car*), it is commonly held that subjectification and grammaticalization are related: “subjectification is more likely to occur in grammaticalization than in lexicalization or in semantic change in general” (p. 39). Still, structural change (essentially: morpho-syntactic recategorization or syntactic reanalysis) is often considered merely a by-product of meaning change: “In general it can be shown that meaning change accompanies rather than follows syntactic change” (Hopper & Traugott 1993: 207). This is in the spirit of the traditional view in grammaticalization approaches, which often assume that grammaticalization is a semantically motivated process and thus semantic change precedes or even motivates structural change (e.g. Haspelmath 1999: 1062; Heine & Kuteva 2002: 3). For English, typical phenomena that have undergone subjectification include e.g. the development of epistemic modal auxiliaries (e.g. *may*,

²⁶ More recently, Meinunger (2022) argues for a general ‘prefield phobia’ of ‘thoroughly expressive’ items.

ought to) and future markers (*going to*). In these cases, subjectification and grammaticalization go hand in hand as the targets are auxiliaries, i.e. categories that are generally taken to belong to the grammatical component of the language system both in functional and formal frameworks. However, subjectification and its extension, “intersubjectification”, have been also argued to have affected epistemic phrases like *I think, I guess*, discourse connectives (*in fact*) and modal adverbs (*apparently, obviously*) or speech-act/stance adverbs (*frankly, actually*) (for a summary, Cuyckens et al. 2010: 10f.).

As we shall argue, notions of purely pragmatically driven language change, such as subjectification or pragmaticalization defined in terms of meaning change, as proposed by Frank-Job (2006), cannot fully account for the developments that we discuss in this paper. They face their major challenge in Pathway II, which relates to pragmatic expressions that have developed from former parentheticals or from interjection-like material. Parentheticals, notably parenthetical clauses, are a major cross-linguistic source for subjective expressions. This is not surprising as parentheticals are typical carriers of metacommunicative content. They are known to be commentary without affecting the truth conditions of the main clause, thus already having a pragmatic function (Potts 2005). The source construction is already metacommunicative or “subjective” and the use of parentheticals for pragmatic purposes does not in itself invoke a (type of) diachronic change. Slight differences in meaning have been argued for parenthetical vs. non-parenthetical constructions like *I think* (Thompson & Mulac 1991; Hopper & Traugott 1993) or *glaub* (Viesel 2011), but these slight interpretative shifts do not amount to significant diachronic subjectification. In other words, there is no typical diachronic process of subjectification or change from propositional to discourse-interactive meaning. This leads to the question of what aspect of the development the term *pragmaticalization* is supposed to refer to. It is a common hypothesis that there is a change from an embedding matrix clause to a parenthetical one, but this has been empirically challenged (Brinton 2008). What we frequently see, however, are signs of lexicalization accompanied by a syntactic integration: A former parenthetical CP develops into some adverb or particle that can occur in host-internal modifier positions with prosodic integration.

4.2 Our notion of pragmaticalization

In this paper, we have discussed pragmaticalization phenomena along two different types of pathways. Thus, we use *pragmaticalization* as a cover term for what might seem to be heterogeneous in terms of source, target, and the processes involved:

(30) Pragmaticalization is defined by target category:

Pragmaticalization =_{def} the development by which an expression becomes part of the communicational layer of the clause. (= 3i)

A main advantage of our proposal is that it covers this heterogeneity. There are several reasons why it is desirable to capture all these phenomena with one account. First of all, heterogeneity is parallel, e.g. we find the same sources for epistemic expressions that we also find for non-epistemic expressions.

Second, all these expressions end up internal to the clause, as part of the communicational layer. This can be seen particularly in German, where due to the verb-second constellation in main clauses, only syntactically integrated material can satisfy the EPP feature in the left periphery and thus constitute a *prefield*-constituent in traditional terms.

Finally, we have argued that the elements under consideration meet some grammaticalization criteria but deviate from typical grammaticalization in a number of respects. Grammaticalization typically affects lexical items that are already syntactically integrated and develop into functional items through processes of semantic, morphological and phonological weakening. Fully-fledged grammaticalization processes typically end in heads. The pragmaticalization phenomena in Pathways I and II either start out in different classes of meaning or originate in material outside of clausal structure and the process we describe is the one by which they become part of the CL. As mentioned, in many cases the respective items have not turned into heads. Thus, phonological and morphological reduction and the change from phrases to heads plays a less prominent, and especially, less crucial role and may be viewed as completely independent (cf. Newmeyer 2001).

Our approach comprises two types of change that have also been put forward in the formal literature on grammaticalization, namely upward reanalysis (e.g. van Gelderen 2011) for Pathway I, and structural simplification (Roberts & Roussou 2003) for Pathway II. In these proposals, grammaticalization is explained syntactically in terms of feature or structural economy, but the nature of the features or structures involved is not a factor. Our proposal genuinely lies on the syntax-pragmatics interface and switches the perspective: different processes can lead to the same result, the contribution to CL, and it is the nature of modifiers in this layer that is responsible for the main characteristics discussed above. For instance, high scope is a direct result of CL dominating PL.

It has been claimed that pragmaticalization leads to syntactic isolation rather than to integration (Frank-Job 2006; Heine 2013). This criterion may be misleading: it is often assumed that pragmatic markers can be proper parts of the sentence (see Traugott & Dasher 2002; Brinton & Traugott 2005; see Wiltschko 2021 in a formal framework). For the elements discussed in this paper we have shown that the opposite development is typical: while syntactically non-integrated chunks provide a good source, there is a diachronic tendency for them to become fully integrated into the syntactic structure. The criterion of fixation is also misleading. In many formal syntactic approaches to adverbs, which we will discuss below, SAdvS and MPs have a specific structural base position in the clause. (Strong) SAdvS have different properties from typical grammaticalized items like affixes due to their category: they can be moved from their

base position, e.g. topicalized to the prefield in German. However, in the German middle field arguments of the verb can scramble from the right to the left of SAdv/MPs, thus creating the illusion that the SAdv/MP appears in multiple positions making them appear more flexible than they actually are.

Our account defines pragmaticalization as integration into CL and not in terms of loss or weakening processes that would lead to results that, as we have observed, are not constitutive of the developments along the two pathways: phonological reduction and head status. Since pragmaticalization is not based on weakening, we do not predict that a pragmaticalized adverb can no longer be moved and becomes fixed in its position. As modifiers in CL, pragmaticalized items are furthermore typically syntactically optional. Unlike tense in the same languages, they do not interact syntactically with the verb through affixation or selection. At the same time, their diachronic innovation is undoubtedly more frequent than that of a new tense or aspect marker or of other canonically grammaticalized elements. We suggest that both facts are related to the nature of CL and therefore to the nature of pragmaticalization. The pragmatic types of meanings contributed by CL do not affect the truth conditions of the main proposition, which leads both to a high competition with other constructions like matrix-clause structures of the type *I think/believe, It is unfortunate that* etc. or parentheticals and to a low pressure towards obligatorification in syntax. This is a regular property for adverbs or particles in CL which generally distinguishes these classes of expressions from (fully) grammaticalized items. It is also arguably a reflex of the fact that, unlike negation, tense or the like, these elements are not part of the main propositional content of the clause. If negation was omitted, the sentence would express the opposite, but omitting a SAdv or a MP does not have this effect.

In fact, in our proposal pragmaticalization is fueled by optionality, since syntactic and pragmatic optionality increase syntactic and pragmatic ambiguity: In a sentence containing a syntactically ambiguous expression, this expression could often be taken to contribute to either PL or CL in the same context. Conversely, an expression with a certain pragmatic function could be interpreted either as parenthetical or integrated into CL. This circumstance increases the number of possible ambiguous contexts significantly. Moreover, in many cases, other expressions with similar functions already exist. The English evidential adverbs *allegedly, reportedly, apparently, obviously, evidently*, for instance, don't form a close paradigm. If for example *reportedly* were obligatory, hearers would infer from its omission that the speaker has direct evidence. But since the expression of evidentiality and particularly the way of expressing it is optional, hearers can easily assume for a different element in the sentence that it expresses the information source.

This leads to one possible concern, however. Since our proposal rests on ambiguity and optionality, the apparent unidirectionality of the change is surprising: ambiguity itself is not directional: it should in general be possible to reinterpret a higher adverb as occupying a lower position or, if still transparent, as a parenthetical. Moreover, since the use of our target items is

typically optional, nothing crucial would be lacking in the clause. In some formal frameworks, unidirectionality in syntactic change has been attributed to economy principles in syntactic derivations (Roberts & Roussou 2003; van Gelderen 2011). In Pathway II, economy would prevent change in the opposite direction as here we are dealing with processes of structural simplification (e.g. reduction of a CP to an AdvP). For Pathway I, however, it is less evident how economy could account for unidirectionality.²⁷ It was suggested above that speakers and hearers need to relate the content of the clause to the common ground and the communicative situation. Accordingly, we expect that *ceteris paribus*, a reading that achieves this via the overt expression of CL will be preferred.

Not every potentially ambiguous constellation leads to reanalysis. It has been noted that epistemic SAdvS usually lack negative counterparts (Bellert 1977).²⁸ Negative counterparts do, however, exist as lower adverbs, cf. (31) (e.g. Müller 2021).

- (31) a. *Impossibly/Improbably, she came home late last night.
 b. This little kitten is impossibly cute.
 c. The numbers were improbably good.

This also constitutes a problem for theories of subjectification and pragmaticalization as purely pragmatic meaning change, since *improbably* would also be more subjective or more meta-communicative as SAdv. This suggests that expressions of CL need to be pragmatically useful because they have a particular discourse function and discourse status. We turn to this issue in the following section.

5 On the nature of the communicational layer

Our syntactic approach defines pragmaticalization as grammaticalization into CL, which, in Section 2, we described as follows:

- (32) In the communicational layer different relations between content, speaker, hearer, and the common ground are conveyed. (= 4b)

In this section, we want to further discuss the nature of this communicational layer.

A very early and arguably the most famous syntactic investigation into the higher functional architecture of the clause has been carried out by Cinque (1999). In his proposal, several Mood and Modal heads carry respective speech act, evaluative, evidential and epistemic features. The relevant part of the resulting architecture is given in (33):

²⁷ Van Gelderen (2011) assumes an explanation in terms of feature economy.

²⁸ For exceptions and how they differ from ordinary SAdv, see Müller (2022).

- (33) [frankly Mood_{speech-act} [fortunately Mood_{evaluative} [allegedly Mood_{evidential} [probably Mod_{epistemic}
 [once T_(Past) [then T_(Future) [perhaps Mood_{irrealis} [necessarily Mod_{necessity} [possibly Mod_{possibility}
 ...]]]]]]]]]]

This hierarchy, however, does not provide a delineation between different projections or different layers of such: besides function and position, there is nothing particularly different between, for example, tense and evaluative mood. However, there is something special about elements that occupy the higher layers: they provide non-at-issue content, i.e. content that does not contribute to the truth conditions of the communicated proposition.²⁹ Using the wrong tense, for example, can render the content of an utterance false. Using the wrong evidential, on the other hand, is still compatible with making a truthful proposal, while the specific nature of dishonesty involved is unclear.³⁰ Thus, this proposal lacks a delineation between PL and CL that is vital for our purposes.³¹

In a more recent proposal, Krifka (2023) discusses the differences between adverbs such as *sicherlich* ‘certainly’ or *wahrscheinlich* ‘probably’ and modal adjectives in copula constructions of the type *es ist sicher/wahrscheinlich, dass...* ‘it is certain/probable that...’. It has long been known that these two classes of expressions convey different types of modality, namely *subjective vs. objective* epistemic modality (cf. the references cited in Krifka 2023).³² A well-known difference is that in contrast to objective modals, subjective modal expressions cannot occur in interrogatives:

- (34) a. *Is it **probably** going to rain? *subjective modal*
 b. **Is it probable** that it is going to rain? *objective modal*

Krifka (2023: 153) also observes a similar contrast for evaluatives (*leider* ‘unfortunately’ vs. *schade sein* ‘be a pity’). He concludes that objective modifiers are part of the TP, whereas subjective epistemic and evidential adverbials are generated in a higher functional projection above the TP, i.e. in a Judgement Phrase (= JudgeP). The introduction of a Judgement Phrase is furthermore motivated by an observation by Frege (1918), who argues that with an assertional sentence three things come together: the apprehension of a thought, the recognition of the truth of a thought (judgement), and the manifestation of this judgement (assertion). Extending this a bit further, Krifka (2023: 119) argues that aspects of the *private judgment* and *public commitment* are encoded in the syntactic form itself and potentially by means of lexical expressions. A declarative clause contains three types of projections above the TP-level, a Judgment Phrase, where epistemic or

²⁹ Cf. Potts (2005) for evaluative and speech-act adverbs and Murray (2017) on evidentials.

³⁰ Sometimes, the use of the wrong evidential is considered a lie (Aikhenvald 2004). However, it is still uncontroversial that at the same time, the speaker may have stated something true in the main part of their sentence.

³¹ The same problem arises for approaches based semantically driven adjunction (e.g. Haider 2000; Ernst 2007), which is not compatible with our proposal.

³² See Yatsushiro et al. (2022) for a recent experimental investigation.

evidential attitudes are represented, a Commitment Phrase for the social commitment present in assertions, and a Speech-Act phrase, which conveys the relation to the common ground:

(35) ActP > ComP > JudgeP > TP

Pragmatic expressions, in particular adverbial modifiers or particles are generated in these projections. While the proposal focuses on adverbs, it also encompasses MPs. MPs like *ja* and *doch* are treated as act modifiers and *wohl* as a judgement modifier. Accordingly, *bitte* and *bloß* could be analyzed as an act modifier and *glaub* as judgement modifier as well.

The parallel diachronic developments of MPs and SAdvS that we have discussed in this paper provide further support for the view that MPs are weak SAdvS (Grosz 2007; Cardinaletti 2011; Coniglio 2022). This view is based on Cardinaletti & Starke's (1999) weak/strong distinction for pronouns. Weak elements in this sense are structurally deficient: they lack certain features and do not project a full set of category specific functional projections. Particularly, MPs lack a projection that contains referential features, which results in their inability to be modified, coordinated, or topicalized. It is not surprising then that we find the same pathways for both SAdvS and MPs, since both belong to the same category and are generated in the same functional domain. The observed parallelism suggests that the relevant part of the architecture must account for epistemic, evidential, evaluative adverbs as well as for MPs, which are often discussed separately and don't play a role in Cinque's (1999) hierarchy.³³

Another recent proposal advocating a plea for encoding discourse-related meaning in the clausal structure is put forward in Wiltschko (2021) (but cf. already Speas & Tenny 2003). According to Wiltschko, the propositional structure, which conveys thoughts about the world that can be true or false, is canopied by an interactional spine that is meant to host different kinds of discourse markers and response particles. It consists of a responding layer and a grounding layer. The grounding layer represents the individual grounds of speaker and addressee (rather than one *common* ground). By contrast, the response layer contains a set of items that may be responded to and indexes them to the speaker or the hearer, marking an utterance e.g. as an initiating or reacting move. While a classical discourse marker like *well* in English is hosted in the response layer, Wiltschko (2021: 209) only briefly discusses the elements we focus on here, i.e. speech-act, evaluative and epistemic/evidential modifiers as well as MPs. These elements would arguably be analyzed as modifiers of the grounding layer in her proposal. The split proposed by Wiltschko corresponds most explicitly to the split between PL and CL that we used to describe the observed diachronic processes. On the other hand, it deviates the most from standard cartographic accounts of adverbs.

³³ In more cartographic approaches, MPs are rather associated with ForceP (see Coniglio 2011).

The different proposals make semantico-pragmatic predictions based on the tools they provide for analysis. From Krifka's recent architecture we expect that all relevant expressions can be analyzed in terms of speech-act or commitment modification or the judge parameter, which relate to the interaction between speaker attitudes and the common ground. Wiltschko's proposal suggests them to be analyzable in terms of response sets and grounds, which encode speaker-hearer interaction and their respective personal grounds.³⁴

The developments along the two pathways can be argued to provide diachronic evidence for the existence of a dedicated functional architecture. It is important to highlight, however, that discerning the details and make-up of the communicational layer is ultimately a synchronic question, not a diachronic one.

As mentioned, a common synchronic characteristic of the material that has undergone pragmaticalization is its ancillary status to the main content of the utterance, which has been coined as *non-at-issue* status.³⁵ In our proposal, this is a property of the CL.

In Pathway I, we typically find developments from at-issue to non-at issue meaning. This is evidenced by the examples in (36): only the low adverb can be used to answer a question, whereas the speech-act adverb cannot (see Potts 2005).

- (36) How did you speak at your medical consultation?
 a. I spoke **frankly** with my doctor.
 b. #**Frankly**, I spoke with my doctor.

For SAdvS derived from clauses there would often be a corresponding sentence-embedding predicate, similar to the subjective-objective pair in (34) above. In Pathway II, however, SAdvS and MPs are derived from parentheticals, which are already non-at-issue (Potts 2005), cf. (37). In this case, their non-at-issue status remains stable through their diachronic development.

- (37) Wer ist für den Regen verantwortlich?
 'Who is responsible for the rain?'
 a. Dem Herrn sei Dank, dass es regnet.
 'To the lord be gratitude that it's raining.'
 b. #Es regnet – Gott sei Dank.
 'It's raining – thank God.'
 c. #Gottseidank regnet es.
 'Thank God it is raining.'

³⁴ This has recently been worked out for several MPs and left-peripheral discourse particles in Austrian German (Wiltschko 2024); see also Thoma (2016). But this goes well beyond the scope of this paper.

³⁵ Cf. Potts (2005); Gutzmann (2015) for MPs; for SAdvS, at-issue readings are sometimes possible, cf. Müller (2021) and Pandarova (2023); Boye & Harder (2012) discuss discursively ancillary status for grammaticalization and Davis & Gutzmann (2015) expressive meaning for pragmaticalization but neither of them focuses on the role of the CL.

Thus, Pathway I represents a development from integrated at-issue material to integrated non-at-issue material, while Pathway II relates to a development from non-integrated non-at-issue to integrated non-at-issue material. Changes in meaning and pragmatic status pertain mostly to Pathway I, where the items in question acquire new meanings related to the functional spine. In Pathway II, by contrast, *glaub* is epistemic and *gottseidank* evaluative before and after the reanalysis.³⁶ Again, it is not the process that unites both pathways, but the end result. In the last section, we noted that epistemic SAdv typically lack a negative counterpart like **impossibly*. Müller (2021; 2022) has argued that this follows from a pragmatic mismatch, which has led to a grammaticalization gap. The propositional part of the clause is used to make a proposal to update the common ground. If the speaker marked their own proposal as impossible or improbable, they would propose to make something common ground that they do not themselves believe in, thus acting insincere and neglecting the principle of cooperation.

Non-at-issue markers can convey a variety of functions that are relevant for the communicative situation. For instance, speakers can convey that the content of the utterance should enter the common ground as their personal belief rather than a fact, as with *glaub*, or as a request with *bitte* or as a permission with *ruhig*. Furthermore, speakers can indicate their own attitude towards either the fact they are bringing forward to enter the common ground, as with *unglücklicherweise* ‘unfortunately’, or to the very fact that they are saying it, namely to the speech act, cf. *ehrlich gesagt* ‘frankly’. Finally, MPs like *doch* or *ja* may indicate that content of their host clause is already in the common ground (Repp 2013).

Whether explicitly expressed or not, every utterance happens in a communicative situation, between humans with intentions, a knowledge base and attitudes, accessing and creating a common ground between the speech-act participants. If we assume a (version of) CL which contains the syntactic features that are relevant to the communicative situation, this has a simple consequence: Given both that marking is optional and that hearers will constantly try to integrate a received utterance into the discourse, the features of CL are always potentially active and hearers may always interpret an element within the discourse vicinity of the clause as part of CL. This is because we always make guesses towards the intentions and attitudes of our interlocutors. We assume that the use of SAdv/MPs, or of other discourse related markers is driven by the speakers’ and hearers’ need to relate the content of a clause to the common ground. Synchronically, this can have a reflex in syntax, namely in the potentially overt expression of CL. In language acquisition, this might be responsible for the situation that a generation of hearers, who make guesses towards the discourse situation, reanalyze an ambiguous structure in favor of an overtly expressed CL.

³⁶ After reanalysis into a single element that is no longer compositionally tied to its individual parts, there is nothing that would prevent a change in meaning over time. But this is irrelevant to the current proposal.

6 Conclusion

In this paper we have discussed various pragmatic expressions with a focus on different types of SAdvS and MPs. We have seen that these expressions go back to very different sources, ranging from adjectives or adverbs to focus particles to fully-fledged finite or non-finite clauses. Despite this heterogeneity, we have argued that there seem to be essentially two major diachronic pathways whose interpretative and discourse-status related properties are quite different.

In Pathway I, the sources are expressions whose communicational contribution is not yet part of their lexical meaning. In the diachronic literature such processes have also been referred to as “(inter-)subjectification” or “pragmaticalization”. The meanings of these elements become more (inter-)subjective as they have come to specify the relation between speaker attitude, the hearer and common ground. Based on recent syntactic approaches in which these pragmatic properties are encoded in the left-peripheral functional syntactic architecture of the clause, we have argued that Pathway I essentially involves an upward reanalysis of material from projections in the propositional layer of the clause into such projections in this communicative layer, as we have called it.

By contrast, in Pathway II, which essentially refers to processes of syntactic integration or formerly parenthetical or interjection-like material, the source expressions already contribute a communicational meaning. Since many of them, however, also contain a complete clausal structure, their reanalysis as a single element in CL involves a radical structural simplification. The steps in Pathway II are thus often complementary to the ones in Pathway I, and it is their target that unites both paths.

We have referred to the diachronic process involved in both pathways as *pragmaticalization*, which we syntactically define as grammaticalization into the communicative layer. According to this definition, pragmaticalization thus also covers the syntactization of expressions that are communicational items conveying non-at-issue content from the beginning.

Based on case studies on German, we have furthermore provided evidence that the reanalyses and recategorizations in pragmaticalization processes may have taken place in contexts of syntactic ambiguity. We leave it open to further research whether syntactic ambiguity is a precondition for pragmaticalization, or merely a catalyst. To this end, it will be necessary to investigate the diachronic evolution of more types of pragmatic expressions and in further languages. Another issue that we leave to future studies is whether there is evidence for further pathways.

We hope that our proposal invites for further investigations and for reexaminations of the syntactic and interpretative mechanisms underlying the evolution of pragmatic expressions.

Abbreviations

CL	Communicational layer
DeReKo	Deutsches Referenzkorpus
DTA	Deutsches Textarchiv
MP	Modal particle
PL	Propositional layer
SAdv	Sentence adverb
REFL	Reflexive pronoun
ReM	Reference Corpus of Middle High German

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Competing interests

The authors have no competing interests to declare.

Corpora

Deutsches Referenzkorpus / Archiv der Korpora geschriebener Gegenwartssprache. Mannheim: Institut für Deutsche Sprache. URL: <https://www.ids-mannheim.de/digspra/kl/projekte/korpora/>

Digitaler Teil des Deutschen Textarchivs. Berlin-Brandenburgische Akademie der Wissenschaften Deutsches Textarchiv. URL: <http://deustextarchiv.de>

Reference Corpus of Middle High German. URL: <https://www.deutschdiachrondigital.de/>

References

Abraham, Werner. 1991. The grammaticalization of the German modal particles. In Traugott, Elisabeth & Heine, Bernd (eds.), *Approaches to Grammaticalization*. Vol. II, 331–380. Amsterdam/Philadelphia: Benjamins.

Ackermann, Tanja. 2023. Die formale und funktionale Entwicklung von ‘bitte’: Eine diachrone Korpusstudie zur Entstehung eines höflichkeitsrelevanten Markers. *Zeitschrift für germanistische Linguistik* 51(1). 152–195. DOI: <https://doi.org/10.1515/zgl-2023-2006>

- Aijmer, Karin. 1997. I think – an English modal particle. In Swan, Toril & Jansen-Westvik, Olaf (eds.), *Modality in Germanic languages: Historical and comparative perspectives*, 1–47. Berlin: Mouton de Gruyter. DOI: <https://doi.org/10.1515/9783110889932.1>
- Aikhenvald, Alexandra Y. 2004. Evidentiality. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/oso/9780199263882.001.0001>
- Andersen, Henning 1973. Abductive and Deductive Change. *Language* 49(4). 765–793. DOI: <https://doi.org/10.2307/412063>
- Autenrieth, Tanja. 2002. *Heterosemie und Grammatikalisierung bei Modalpartikeln*. Tübingen: Niemeyer. DOI: <https://doi.org/10.1515/9783110960907>
- Axel-Tober, Katrin. 2016. Satzadverbiale im Deutschen: synchrone und diachrone Fragen bei einem ‚scheints‘ alten Thema. In Neri, Sergio & Schuhmann, Roland & Zeilfelder, Susanne (eds.), „dat ich dir it nu bi huldi gibu“ – *Linguistische, germanistische und indogermanistische Studien Rosemarie Lühr gewidmet*, 23–33. Wiesbaden: Reichert.
- Axel-Tober, Katrin & Coniglio, Marco & Müller, Kalle & Paul, Katharina. To appear. Grammaticalization of sentence adverbs and particles revisited. In Kennard, Holly & Lindsay-Smith, Emily & Lahiri, Aditi & Maiden, Martin (eds.), *Historical Linguistics 2022: Selected papers from the 25th International Conference on Historical Linguistics*. Oxford 1–5 August 2022, 233–249. Amsterdam: Benjamins.
- Axel-Tober, Katrin & Müller, Kalle. 2017. Evidential adverbs in German: Diachronic development and present-day meaning. *Journal of Historical Linguistics* 7(1/2). 9–47. DOI: <https://doi.org/10.1075/jhl.7.1-2.02axe>
- Barth-Weingarten, Dagmar & Couper-Kuhlen, Elizabeth. 2002. On the development of final ‘though’: A case of grammaticalization? In Wischer, Ilse & Diewald, Gabriele (eds.), *New reflections on grammaticalization*, 345–361. Amsterdam/Philadelphia: John Benjamins. DOI: <https://doi.org/10.1075/tsl.49.22bar>
- Bayer, Josef & Obenauer, Hans-Georg. 2011. Discourse particles, clause structure, and question types. *The Linguistic Review* 28. 449–491. DOI: <https://doi.org/10.1515/tlir.2011.013>
- Beijering, Karin & Norde, Muriel. 2019. Adverbial semi-insubordination constructions in Swedish: Synchrony and diachrony. In Beijering, Karin & Kaltenböck, Gunther & Sansiñena, María S. (eds.), *Insubordination: Theoretical and empirical issues*, 79–106. Berlin: De Gruyter. DOI: <https://doi.org/10.1515/9783110638288-004>
- Bellert, Irena. 1977. On semantic and distributional properties of sentential adverbs. *Linguistic Inquiry* 8. 337–351.
- Boye, Kasper & Harder, Peter. 2012. A usage-based theory of grammatical status and grammaticalization. *Language* 88(1). 1–44. DOI: <https://doi.org/10.1353/lan.2012.0020>
- Brinton, Laurel J. 2008. *The comment clause in English: Syntactic origins and pragmatic development*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511551789>
- Brinton, Laurel J. & Traugott, Elizabeth C. 2005. *Lexicalization and language change*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511615962>

- Burkhardt, Armin. 1994. Abtönungspartikeln im Deutschen: Bedeutung und Genese. *Zeitschrift für germanistische Linguistik* 22. 129–151. DOI: <https://doi.org/10.1515/zfgl.1994.22.2.129>
- Cardinaletti, Anna. 2011. German and Italian modal particles and clause structure. In Biberauer, Theresa & Sheehan, Michelle (eds), *Particles through a modern syntactic lens*. Special edition of *The Linguistic Review* 28(4). 493–531. Berlin: de Gruyter. DOI: <https://doi.org/10.1515/tlir.2011.011>
- Cardinaletti, Anna & Starke, Michal. 1999. The typology of structural deficiency: A case study of the three classes of pronouns. In van Riemsdijk, Henk (ed.), *Clitics in the Languages of Europe* (EALT 5/ EURO TYP 20-5), 145–233. Berlin: Mouton de Gruyter. DOI: <https://doi.org/10.1515/9783110804010.145>
- Cinque, Guglielmo. 1999. *Adverbs and functional heads. A cross-linguistic perspective*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/oso/9780195115260.001.0001>
- Coniglio, Marco. 2011. *Die Syntax der deutschen Modalpartikeln. Ihre Distribution und Lizenzierung in Haupt- und Nebensätzen*. Berlin: Akademie Verlag. DOI: <https://doi.org/10.1524/9783050053578>
- Coniglio, Marco. 2022. On the adverbial origin of German modal particles. In Xabier Artiagoitia, Xabier & Elordieta, Arantzar & Monforte, Sergio (eds.), *Discourse particles: syntactic, semantic, pragmatic and historical aspects*, 13–40. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.276.01con>
- Cuyckens, Hubert & Davidse, Kristin & Vandelanotte, Lieven. 2010. Introduction. In Davidse, Kristin & Vandelanotte, Lieven & Cuyckens, Hubert (eds.), *Subjectification, intersubjectification and grammaticalization*, 1–26. Berlin: Mouton De Gruyter. DOI: <https://doi.org/10.1515/9783110226102.0.1>
- Davis, Christopher & Gutzmann, David. 2015. Use-conditional meaning and the semantics of pragmaticalization. *Proceedings of Sinn Und Bedeutung* 19. 197–213.
- Diewald, Gabriele. 1997. *Grammatikalisierung: Eine Einführung in Sein und Werden grammatischer Formen*. Tübingen: Niemeyer. DOI: <https://doi.org/10.1017/S1040820700002626>
- Diewald, Gabriele. 2006. Discourse particles and modal particles as grammatical elements. In Fischer, Kerstin (ed.), *Approaches to discourse particles*, 403–425. Amsterdam: Elsevier. DOI: https://doi.org/10.1163/9780080461588_022
- Diewald, Gabriele. 2011. Pragmaticalization (defined) as grammaticalization of discourse functions. *Linguistics* 49(2). 365–390. DOI: <https://doi.org/10.1515/ling.2011.011>
- Dörre, Laura & Cypionak, Anna & Trotzke, Andreas & Bayer, Josef. 2018. The processing of German modal particles and their counterparts. *Linguistische Berichte* 255. 58–91. DOI: https://doi.org/10.46771/2366077500255_2
- Erman, Britt & Kotsinas, Ulla-Britt. 1993. Pragmaticalization: The case of ‘ba’ and ‘you know’. *Studier i modern sprakvetenskap* 10. 76–92.
- Ernst, Thomas. 2007. On the role of semantics in a theory of adverb syntax. *Lingua* 117(6). 1008–1033. DOI: <https://doi.org/10.1016/j.lingua.2005.03.015>
- Frank-Job, Barbara. 2006. A dynamic-interactional approach to discourse markers. In Fischer, Kerstin (ed.), *Approaches to discourse particles*, 395–413. Amsterdam: Elsevier. DOI: https://doi.org/10.1163/9780080461588_020

- Frege, Gottlob. 1918. Der Gedanke. Eine logische Untersuchung. *Beiträge zur Philosophie des Deutschen Idealismus* 2. 58–77. DOI: <https://doi.org/10.1515/bgsl.1918.1918.43.219>
- Frey, Werner & Pittner, Karin. 1998. Zur Positionierung der Adverbiale im deutschen Mittelfeld. *Linguistische Berichte* 176. 489–534.
- Grosz, Patrick. 2007. German discourse particles are weak sentence adverbs, In Picchi, M. Cecilia & Pona, Alan (eds.), *Proceedings of the XXXII Incontro di Grammatica Generativa*, 79–91. Edizioni dell’Orso.
- Grosz, Patrick. 2014. Optative markers as communicative cues. *Natural Language Semantics* 22. 89–115. DOI: <https://doi.org/10.1007/s11050-013-9101-1>
- Gutzmann, Daniel. 2015. *Use-conditional meaning. Studies in multidimensional semantics*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780198723820.001.0001>
- Haider, Hubert. 2000. Adverb placement: Convergence of structure and licensing. *Theoretical Linguistics* 26. 95–134. DOI: <https://doi.org/10.1515/thli.2000.26.1-2.95>
- Haider, Hubert. 2010. *The syntax of German*. Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511845314>
- Haspelmath, Martin. 1999. Why is grammaticalization irreversible? *Linguistics* 37(6). 1043–1068. DOI: <https://doi.org/10.1515/ling.37.6.1043>
- Heine, Bernd. 2013. On discourse markers: Grammaticalization, pragmaticalization, or something else? *Linguistics* 51(6). 1205–1247. DOI: <https://doi.org/10.1515/ling-2013-0048>
- Heine, Bernd & Kuteva, Tania. 2002. *World lexicon of grammaticalization*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511613463>
- Hentschel, Elke. 1986. *Funktion und Geschichte deutscher Partikeln. Ja, doch, halt und eben*. Tübingen: Niemeyer. DOI: <https://doi.org/10.1515/9783111371221>
- Hetland, Jorunn. 1992. *Satzadverbien im Fokus*. Tübingen: Narr.
- Hopper, Paul J. & Traugott, Elizabeth C. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- König, Ekkehard. 1991. *The meaning of focus particles: A comparative perspective*. London: Routledge. DOI: <https://doi.org/10.4324/9780203212288>
- Krifka, Manfred. 2008. Basic notions of information structure. *Acta Linguistica Hungarica* 55(3–4). 243–276. DOI: <https://doi.org/10.1556/ALing.55.2008.3-4.2>
- Krifka, Manfred. 2023. Layers of assertive clauses: Propositions, judgements, commitments, acts. In Hartmann, Jutta & Wöllstein, Angelika (eds.), *Propositionale Argumente im Sprachvergleich: Theorie und Empirie*, 116–183. Tübingen: Narr.
- Lehmann, Christian. 1995. *Thoughts on grammaticalization*. München: LINCOM.
- Lichtenberk, Frantisek. 1991. Semantic change and heterosemy in grammaticalization. *Language* 67(3). 475–509. DOI: <https://doi.org/10.1353/lan.1991.0009>
- López-Couso, María José & Méndez-Naya, Belén. 2016. From clause to adverb. On the history of ‘maybe’. In Kaltenböck, Gunther & Keizer, Evelien & Lohmann, Arne (eds.), *Outside the clause*:

- Form and function of extra-clausal constituents*, 157–176. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/slcs.178.06lop>
- Meinunger, André. 2006. Interface restrictions on verb second. *The Linguistic Review* 23(2). 127–160. DOI: <https://doi.org/10.1515/TLR.2006.005>
- Meinunger, André. 2022. Pre-field phobia – About formal and meaning-related prohibitions on starting a German V2 clause. *The Linguistic Review* 39(4). 699–742. DOI: <https://doi.org/10.1515/tlr-2022-2102>
- Müller, Kalle. 2021. *Satzadverbien und Evidentialität*. Berlin: De Gruyter. DOI: <https://doi.org/10.1515/9783110751956>
- Müller, Kalle. 2022. Zur lexikalischen Kategorie der Satzadverbien im Deutschen. In Modicom, Pierre-Yves (ed.), *Adverbien und Adverbiale. Grenzen und Gliederung einer syntaktischen Kategorie im Deutschen*, 215–231. Heidelberg: Winter.
- Murray, Sarah. 2017. *The semantics of evidentials*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/oso/9780199681570.001.0001>
- Newmeyer, Frederick. 2001. Deconstructing grammaticalization. *Language Sciences* 23. 187–229. DOI: [https://doi.org/10.1016/S0388-0001\(00\)00021-8](https://doi.org/10.1016/S0388-0001(00)00021-8)
- Norde, Muriel. 2009. *Degrammaticalization*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199207923.001.0001>
- Nordlinger, Rachel & Traugott, Elizabeth C. 1997. Scope and the development of epistemic modality. *English Language and Linguistics* 1. 295–317. DOI: <https://doi.org/10.1017/S1360674300000551>
- Ørsnes, Bjarne. 2023. On obligatorily fronted adverbials in German: The case of *klar* ‘of course’. *Globe: A Journal of Language, Culture and Communication* 17. 53–65. DOI: <https://doi.org/10.54337/ojs.globe.v17i.8198>
- Pandarova, T. Irina. 2023. *Revisiting sentence adverbials and relevance*. Amsterdam/Philadelphia: John Benjamins. DOI: <https://doi.org/10.1075/pbns.334>
- Peltola, Niilo. 1982/1983. Comment clauses in Present-Day English. In Koskenniemi, Inna & Pennanen, Esko & Aaltonen, Hilka (eds.), *Studies in classical and modern philology*, 101–113. Helsinki: Suomalainen Tiedeakatemia.
- Petrova, Svetlana. 2017. On the status and the interpretation of the left-peripheral sentence particles ‘*inu*’ and ‘*ia*’ in Old High German. In Bayer, Josef & Struckmeier, Volker (eds.), *Discourse particles. Formal approaches to their syntax and semantics*, 304–331. Berlin: de Gruyter. DOI: <https://doi.org/10.1515/9783110497151-012>
- Pittner, Karin. 2000. Sprechaktbedingungen und bedingte Sprechakte: Pragmatische Konditionalsätze im Deutschen. *Linguistik Online* 5(1). DOI: <https://doi.org/10.13092/lo.5.1021>
- Pittner, Karin. 2009. ‘Wieder’ als Modalpartikel. *Zeitschrift für germanistische Linguistik* 37(2). 296–314. DOI: <https://doi.org/10.1515/ZGL.2009.019>
- Potts, Christopher. 2005. *The logic of conventional implicatures*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199273829.001.0001>

- Ramat, Paolo & Ricca, Davide. 1998. Sentence adverbs in the languages of Europe. In van der Auwera, Johan (ed.), *Adverbial constructions in the languages of Europe*, 187–275. Berlin: Mouton de Gruyter. DOI: <https://doi.org/10.1515/9783110802610.187>
- Reis, Marga. 2002. Wh-movement and integrated parenthetical constructions. In Zwart, Jan-Wouter & Abraham, Werner (eds.), *Studies in comparative Germanic syntax. Proceedings from the 15th workshop on comparative Germanic syntax*, 3–40. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.53.04rei>
- Repp, Sophie. 2013. Common ground management: Modal particles, illocutionary negation and verum. In Gutzmann, Daniel & Gärtner, Hans-Martin (eds.), *Beyond expressives: Explorations in use-conditional meaning*, 231–274. Leiden: Brill. DOI: https://doi.org/10.1163/9789004183988_008
- Roberts, Ian & Roussou, Anna. 2003. *Syntactic change. A minimalist approach to grammaticalization*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511486326>
- Sauerland, Uli & Yatsushiro, Kazuko. 2017. Remind-me presuppositions and speech-act decomposition: Evidence from particles in questions. *Linguistic Inquiry* 48(4). 651–678. DOI: https://doi.org/10.1162/LING_a_00257
- Speas, Peggy & Tenny, Carol. 2003. Configurational properties of point of view roles. In di Sciullio, Anna-Maria (ed.), *Asymmetry in grammar*, 315–345. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.57.15spe>
- Sudhoff, Stefan. 2010. *Focus particles in German: Syntax, prosody, and information structure*. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.151>
- Swan, Toril. 1988. *Sentence adverbials in English: A synchronic and diachronic investigation*. Oslo: Novus.
- Thoma, Sonja C. 2016. *Discourse particles and the syntax of discourse-evidence from Miesbach Bavarian*. Doctoral dissertation, University of British Columbia.
- Thompson, Sandra A. & Mulac, Anthony. 1991. *A quantitative perspective on the grammaticization of epistemic parentheticals in English*. In Traugott, Elizabeth C. & Heine, Bernd (eds.), *Approaches to grammaticalization: Volume 1*, 313–329. Amsterdam/Philadelphia: Benjamins. DOI: <https://doi.org/10.1075/tsl.19.2.16tho>
- Traugott, Elizabeth C. 1989. On the rise of epistemic meanings in English: An example of subjectification in semantic change. *Language* 65. 31–55. DOI: <https://doi.org/10.2307/414841>
- Traugott, Elizabeth C. 1995. The role of the development of discourse markers in a theory of grammaticalization. Paper presented at *the International Conference of Historical Linguistics XII*. Manchester, August.
- Traugott, Elizabeth C. 2010. Revisiting subjectification and intersubjectification. In Davidse, Kristin & Vandelanotte, Lieven & Cuyckens, Hubert (eds.), *Subjectification, intersubjectification and grammaticalization*, 29–70. Berlin: Mouton De Gruyter.
- Traugott, Elizabeth C. & Dasher, Richard B. 2002. *Regularity in semantic change*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/CBO9780511486500>
- van Gelderen, Elly. 2004. *Grammaticalization as economy*. Amsterdam: John Benjamins. DOI: <https://doi.org/10.1075/la.71>

- van Gelderen, Elly. 2011. *The linguistic cycle: Language change and the language faculty*. Oxford: Oxford University Press. DOI: <https://doi.org/10.1093/acprof:oso/9780199756056.003.0001>
- Viesel, Yvonne. 2011. 'glaubt er', 'glaub ich', 'glaub': Integrierte V1-Parentthesen, Extraktion aus V2-Komplementen, Grammatikalisierung. *Linguistische Berichte* 226. 129–169. DOI: https://doi.org/10.46771/2366077500226_1
- Waltereit, Richard. 2012. On the origins of grammaticalization and other types of language change in discourse strategies. In Davidse, Kristin & Breban, Tine & Brems, Lieselotte & Mortelmans, Tanja (eds.), *Grammaticalization and language change: New reflections*, 51–72. Amsterdam: Benjamins. DOI: <https://doi.org/10.1075/slcs.130.03wal>
- Wiltschko, Martina. 2021. *The grammar of interactional language*. Cambridge: Cambridge University Press. DOI: <https://doi.org/10.1017/9781108693707>
- Wiltschko, Martina. 2024. The syntax of talking heads. *Journal of Pragmatics* 232. 182–198. DOI: <https://doi.org/10.1016/j.pragma.2024.08.011>
- Winter-Froemel, Esme. 2014. Re(de)fining grammaticalization from a usage-based perspective Discursive ambiguity in innovation scenarios. *Folia Linguistica* 48(2). 503–556. DOI: <https://doi.org/10.1515/flin.2014.017>
- Wischer, Ilse. 2000. Grammaticalization versus lexicalization: Methinks there is some confusion. In Fischer, Olga & Rosenbach, Annette & Stein, Dieter (eds.), *Pathways of change: Grammaticalization in English*, 355–370. Amsterdam: Benjamins. DOI: <https://doi.org/10.1075/slcs.53.17wis>
- Woods, Rebecca. 2016. Modelling the syntax–discourse interface: A syntactic analysis of 'please'. In *ConSOLE XXIII: Proceedings of the 23rd Conference of the Student Organisation of Linguistics in Europe*, 360–382.
- Yatsushiro, Kazuko & Trinh, Tue & Żygis, Marzena & Solt, Stephanie & Benz, Anton & Krifka, Manfred. 2022. Certainly but not certain: The expression of subjective and objective probability. *Glossa: a journal of general linguistics* 7(1). DOI: <https://doi.org/10.16995/glossa.5847>

