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ORIGINAL PAPER

Being as big as small clauses get: the syntax of participial adjuncts in German and English

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Abstract This paper presents a comparative syntactic account of participial adjuncts in German and English. While the typological literature describes German participial adjuncts as much more restricted than their English counterparts both syntactically and semantically, this paper presents empirical evidence that these differences have been exaggerated. Based on a corpus of more than 3000 participial adjuncts, it is argued that these adjuncts have a clause-like internal structure in both languages. Participial adjuncts are analysed as small clauses that can project all the way up to CP level, with a subject that is either phonetically null PRO controlled via Agree or an overt DP that is case licensed either by an element outside the participial clause or through default case. At the same time, the corpus data show that these participial constructions constitute a versatile group of adjuncts when it comes to their argument-structural properties and categorial nature. An analysis couched within the framework of Distributed Morphology is presented that can account for this diversity. This empirically based and theoretically founded account of participial adjuncts contributes to our understanding of the structural possibilities of small clauses cross-linguistically.

Keywords Participles · Non-finite adjuncts · Small clauses · Distributed Morphology · Adjunct control · Absolutes

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1 Introduction

This paper is concerned with the internal structure of participial adjuncts in German and English, such as the following underlined constructions:

(1) Ein Bierglas auf dem Kopf balancierend, drängelt er sich durch die Massen.
a beer.glass on the head balance.PRS.PTCP pushes he REFL through the masses
(DeReKo: HMP11/JUN.02095)
'Balancing a beer glass on his head, he makes his way through the masses.'

(2) Das [Football-Ei] fest an die Brust gedrückt sprintet Danny Washington los
the football-egg tightly to the chest press.PST.PTCP sprints Danny Washington off
(DeReKo: M07/JUL.06019)
'With the American football pressed tightly to his chest, Danny Washington sets off.'

(3) Anyone who can sound so apparently unconcerned, with his spacecraft exploding around him, and Houston asking him to repeat what he just said, deserves to be called (…) 'a real pro'. (BNC: B75 1979)

(4) Their marriage, eroded at the start by poverty, was finished off by her success. (OMC: MD1E.1.s590)

While these participial structures are non-finite, they share significant properties with finite clauses. First, they express predication between a null (as in (1) and (4)) or overt (as in (2)–(3)) subject and a participial predicate. Second, they typically contain additional elements functioning as arguments or adjuncts of the participial predicate. Third, these structures occur in adjunct, complement and (at least in English) subject position, just like finite subordinate clauses. These (and other) properties led Williams (1975) to suggest the term "small clauses" for participial structures like these, a term which has since been used more generally to denote non-finite, but predicative constituents of the type [DP/PRO_{SUB} (…) XP_{PRED}].

The question of how complex (clause-like) the internal structure of small clauses really is has been the topic of much linguistic debate for decades. For non-finite structures with a (present-)participial predicate, the discussion goes back at least as far as Chomsky (1970). Since then, a number of structural accounts of small clauses has been proposed, which either represent them as lexical projections of their predicate (e.g., Stowell 1981, 1983; Chomsky 1981) or argue that these non-finite structures additionally contain one or several functional layers (e.g. Bowers 1993, 2001; see Citko 2011 for an overview). For participial small clauses, which are usually assumed to have a predicate categorised as a verb, these functional layers are typically represented as the same projections as those we find in finite clauses (cf. Reuland 1983; Johnson 1988; Pires 2006, 2007; Thurén 2008, Helland and Pitz 2012, 2014; Brodahl 2016; Brodahl and Høyem 2018), but assumptions vary when it comes to the question of which projections are present in the constructions and the specific properties of their heads.

While some structural analyses of participial small clauses have been proposed, these largely focus on English present participles (or gerunds[1]) in argument position (e.g., Reuland 1983; Johnson 1988; Pires 2006, 2007). A significant amount of theoretical discussion has also been concerned with the categorial nature of both participles in various uses, with either a verbal (or clause-like) or a nominal internal structure being considered for present participles following Chomsky (1970) (see also, e.g., Wasow and Roeper 1972; Horn 1975; Williams 1975; Abney 1987) and passive past participles being analysed either as verbal or as adjectival structures following Wasow (1977) (see also, e.g., Kratzer 2000; Embick 2004; Anagnostopoulou 2003; Alexiadou and Anagnostopoulou 2008; Lundquist 2008, 2013; Alexiadou et al. 2015). Much less attention has been given to the syntax of participial small clauses in adjunct position, especially from a cross-linguistic perspective, with notable exceptions being Egerland (2002), Ojea (2011) and Helland and Pitz (2012, 2014).[2] At the same time, the typological literature on these adjuncts (e.g., Kortmann 1988, 1991, 1995; König and van der Auwera 1990; König 1995; van de Pol and Petré 2015) makes a number of interesting claims about the nature of such adjuncts cross-linguistically, which beg for closer inspection and a theoretical analysis.

This paper proposes an analysis of the internal structure of adjunct small clauses with a participial predicate in two Germanic languages, German and English. I will argue that participial adjuncts in these two languages have a similar structural basis, despite the alleged differences that have been the focus of attention in the comparative literature. Relying on a corpus of more than 3000 participial adjuncts in the two languages, I will present evidence that adjunct participles can be as big—or as clause-like—as small clauses can get, in that they contain a predicate that is usually categorised as a verb, a (null or overt) subject, a TP domain and in the case of participial adjuncts with a null subject even a CP domain. At the same time, there are significant structural differences between the many subtypes of these adjuncts, which are distinguished by their participial head and the realisation of their subject. And while the cross-linguistic differences seem to be smaller than argued in the typological literature, the corpus data reveal interesting variation across the two languages which needs to be accounted for structurally, especially concerning the specific nature of the participial predicate and the syntactico-semantic properties of adjuncts with an overt subject (henceforth: absolute adjuncts). The structural analysis to be presented here is couched within the framework of Distributed Morphology, which can account for the diverse argument-structural and categorial nature of participles.

[1] A note on terminology: As is well known, the traditional terms 'present' and 'past' participles are inaccurate and therefore often replaced by terms such as the '*-ing'* (or 'gerund', which is equally controversial; see, e.g., Huddleston and Pullum 2002, 82f.) and "*-en*" participle for English participles and "Partizip 1" and "Partizip 2" for German ones. While I acknowledge that there are good reasons to use terms referring to morphological form rather than tense, I use the traditional terms in this paper to make cross-linguistic comparison easier.

[2] See also Thurén (2008) for a syntactic account of present-participial adjuncts in Swedish as well as Brodahl (2016, 2018, 2020), Brodahl and Høyem (2018a, b) and Høyem and Brodahl (2019) for theoretical accounts of German participial adjuncts.

The paper is organised as follows. In Sect. 2, I will reproduce some central comparative claims that have been made in the typological literature. After Sect. 3 has outlined the empirical foundation and methodological considerations of the present study, Sect. 4 will describe the syntactic and semantic properties that characterise the participial adjuncts in the corpus and compare these to the claims made in the literature. Following this, the paper will take a theoretical turn, focusing on the internal structure of participial adjuncts. After outlining key theoretical assumptions in Sect. 5, I will present a structural analysis of participial adjuncts from root to CP level in Sect. 6, while Sect. 7 deals with the licensing of their null or overt subject. Section 8, finally, concludes the paper.

2 Comparative accounts of participial adjuncts

Even though German and English are two closely related languages, the general impression emerging from the cross-linguistic research literature on participial adjuncts is that German adjuncts are more restricted than English ones in several respects. On a general level, participial adjuncts are said to be both less frequent and less acceptable in German than in English. For example, Kortmann (1995, 192) compares the English corpus data of Kortmann (1991) with the German corpus data presented in Filipović (1977) and concludes that "on average, English employs five times as many of these constructions per 10,000 words as German does".[3] König and van der Auwera (1990, 349) furthermore make the rather strong claim that "[i]n Modern German, participial constructions can still be found in scientific and literary discourse (cf. Bungarten 1976; Rath 1971), but they are artificial, clumsy and awkward in most cases and thus frowned upon by prescriptive grammarians". Particularly certain types of absolute adjuncts, primarily those headed by a present participle, are described as infrequent or even ungrammatical in contemporary German (Kortmann 1988, 67ff.). On the other hand, van de Pol and Petré (2015, 18) state that after English, German is "[arguably] the Germanic language in which the use of absolutes is still the most natural today" because it is "the only Germanic language in which certain types of absolutes with present participles are fully acceptable".

Furthermore, German participial adjuncts are claimed to be more limited than English ones when it comes to their interpretation. In both languages, participles occur both as adverbials and as DP adjuncts, but according to König and van der Auwera (1990, 349), "there is a preference for certain [adverbial] interpretations ('manner' more likely than 'cause')" in German. Regarding the temporal or aspectual interpretation of these constructions, König (1995, 72f.) and Haug et al. (2012, 158ff.) argue that only English allows present-participial adjuncts to denote an event which does not temporally overlap with the matrix event, as in (5):

[3] However, the two corpora are arguably not directly comparable, as Kortmann's (1991) corpus consists of non-finite adjuncts with all kinds of predicates, while Filipović's (1977) corpus only contains participial adjuncts.

(5) The headmaster resigned in September, dying before the end of the year.
(König 1995, 73; Haug et al. 2012, 154)

The conclusion that German participial adjuncts are less flexible than their English counterparts carries over to the domain of internal structure. König and van der Auwera (1990, 349) claim that in German, "there is a clear preference for phrase-like, i. e. non-sentential participial constructions (no adverbials or negation)". Similarly, König (1995, 73) stresses that participles "quickly become unacceptable beyond a certain level of complexity", using the following example to suggest that even a single element in addition to the participle reduces the acceptability of the adjunct (see also Rath 1971, 79; Kortmann 1988, 88):[4]

(6) Hans kam (? ein Lied) pfeifend in die Küche.
Hans came a song whistling into the kitchen
'Hans came into the kitchen, whistling (a tune).'
(König 1995, 73)

This claim contrasts with the many authentic examples of complex German participial adjuncts provided in the corpus-based studies of, e.g., Bungarten (1976), Filipović (1977), Kwaśniak (2012), Helland and Pitz (2012, 2014) and Brodahl (2016, 2018, 2020), and, as we shall see in Sect. 4.1, with the majority of the adjuncts in the corpus of the present study.

It is also frequently noted in the literature that German participial adjuncts cannot have a complex predicate, the reason being that the participial forms of the auxiliary verbs *haben* 'have', *sein* 'be' or *werden* 'be (passive)', are practically obsolete in modern German (Bungarten 1976, 129 f.; Kortmann 1988, 66f.; König and van der Auwera 1990, 349). The following examples taken from Bungarten (1976, 129f.) demonstrate this, while the largely literal translations of these examples show that

[4] As an anonymous reviewer notes, the (un)acceptability of German participial adjuncts seems to depend on the position of the adjunct. The acceptability of more complex adjuncts increases significantly when they occur in sentence-initial or sentence-final position, a point which is not acknowledged by König (1995):

(i) Hans kam in die Küche, gedankenverloren ein Lied vor sich hin pfeifend.
Hans came into the kitchen absentmindedly a song before REFL along whistle.PRS.PTCP

(ii) Gedankenverloren ein Lied vor sich hin pfeifend kam Hans in die Küche.
absentmindedly a song before REFL along whistle.PRS.PTCP came Hans into the kitchen
'Hans came into the kitchen, absentmindedly whistling a tune to himself.'

participial adjuncts with a complex predicate containing auxiliary *being* or *having* are fine in English:

(7) *Der Einbrecher suchte, von einer Kugel getroffen
the burglar saw by a bullet hit.PST.PTCP
worden seiend, einen Arzt auf.
be.PST.PTCP be.PRS.PTCP a doctor PTCL
'The burglar saw a doctor, having been hit by a bullet.'

(8) *Ihre Nachtmahlzeit gegessen habend, (…)
their evening.meal eat.PST.PTCP have.PRS.PTCP
'Having eaten their evening meal, (…)'

(9) *Der Bettler schlendert, von allen hungrigen
the beggar wanders, by all hungry
Hunden der Stadt verfolgt werdend,
dogs the.GEN city follow.PST.PTCP be.PRS.PTCP
durch die Poppelsdorfer Allee.
through the Poppelsdorfer Allee
'The beggar wanders through Poppelsdorfer Allee, being followed by all the hungry dogs of the city.'

In sum, the comparative research literature paints a picture of German participial adjuncts as significantly more restricted than English ones when it comes to their use, semantic flexibility and structural complexity. This conclusion will be challenged in Sect. 4, where I will argue that while there are interesting cross-linguistic differences between participial adjuncts in German and English, the works cited above undermine key properties that hold across both languages and in some respects exaggerate the differences between them.

3 Empirical basis: corpus data

In order to explore and analyse the syntactic and semantic properties of adjunct participles in German and English, a sound empirical foundation consisting of authentic linguistic data is necessary. Therefore, the empirical and theoretical conclusions in this paper are based upon a qualitative corpus study of 3159 German and English participial adjuncts. The corpus consists of a variety of participial adjuncts, headed either by the present or the past participle and either containing or lacking an overt subject. Table 1 gives an overview of the adjuncts in the corpus by participle and subject type, with 'free adjunct' referring to participles with a null subject and 'absolutes' to those with an overt subject (cf. Kortmann 1991, 1995):

Previous studies of participial adjuncts in contemporary German and (to a lesser extent) English range in sample size from a few hundred (Rath 1971; Bungarten 1976) to more than 5500 examples (Filipović 1977; see also Kwaśniak 2012 for a large corpus of 3285 German participle constructions of various types). This means that the corpus of the current study is located somewhere in the middle sizewise, with the language-specific subcorpora being perhaps most comparable to

Table 1 Corpus data

	Free adjuncts	Absolutes	Sum
German present participles	627	134	761
German past participles	823	440	1263
German corpus in total	*1450*	*574*	*2024*
English present participles	450	305	755
English past participles	258	122	380
English corpus in total	*708*	*427*	*1135*
Adjunct corpus in total	2158	1001	3159

Kortmann's (1991) corpus of 1681 free adjuncts and absolutes in English.[5] A corpus of this size is necessary for a qualitative study of these constructions, which—as has already been indicated above and will become even clearer in the next sections—constitute a syntactically and semantically versatile group of adjuncts.

The majority of the data was collected from three large, digital and morphologically tagged corpora of contemporary German and English: The German Reference Corpus (Deutsches Referenzkorpus/DeReKo), maintained by the Leibniz-Institut für Deutsche Sprache (IDS) in Mannheim; the Oslo Multilingual Corpus (OMC), hosted at the University of Oslo; and the British National Corpus (BNC), which was accessed via The University of Lancaster's software *BNCweb*. In addition, around 350 of the constructions in the corpus were collected manually from novels and newspaper articles.[6] Taken together, the corpus data originate from a variety of written texts, including newspapers, magazines, as well as fictional and non-fictional literature. The large majority of the adjuncts in the corpus were found through general searches for present- and past-participial morphology in both languages. While using such broad search queries was time consuming, as adjuncts made up only a small percentage of the hits, this was nevertheless necessary to ensure that no relevant adjuncts were excluded from the search. However, some construction types occurred so rarely that more specific search queries were needed. This was primarily the case for absolute adjuncts in both languages, as well as participial adjuncts introduced by complementisers in English. In order to find more relevant examples of these types, I searched for participles occurring 1–5 words after a noun and participles preceded directly by a complementiser.

All participial small clauses in the corpus were analysed in detail with regard to their syntax and semantics. This includes the properties of the participial predicate and other elements in the constructions, as well as the position and interpretation of the adjuncts in their co(n)text. In this paper, the focus will be on the former, i.e. the internal syntax and to some extent semantics of participial adjuncts. To avoid the

[5] Note that the studies mentioned in this paragraph focus on various subgroups of participial adjuncts. The corpora they are based on are therefore not necessarily directly comparable.

[6] I am indebted to Solveig Skartsæterhagen, who granted me access to the German corpus data discussed in Skartsæterhagen (2006). 151 of the German absolutes are taken from this material, which she collected manually from a selection of German novels from the last century.

pitfalls of relying on corpus data alone—i.e., production errors and the lack of negative evidence—I have regularly consulted the intuitions of native speakers.

4 Properties of participial adjuncts in German and English

4.1 Cross-linguistic similarities

When one compares the German and English participial adjuncts in the corpus while keeping the reported cross-linguistic differences from Sect. 2 in mind, it is striking how much these adjuncts appear to have in common across the two languages. While the qualitative corpus data of the present study cannot be used to make quantitative claims about the relative frequency of these adjuncts in the two languages, the data indicate that participial adjuncts occur with the same interpretations and allow for the same level of syntactic complexity in both languages. Contrary to what König and van der Auwera (1990) suggest, the same adverbial interpretations occur in both the English and the German parts of the corpus. These interpretations range from circumstantial interpretations, as the temporal adverbial in (10) illustrates, to speaker-oriented readings such as in (11), as well as the more vague, but frequent interpretation as 'accompanying circumstance' (cf. Kortmann 1991, 1995) in (12).[7]

(10) Bei ihm angelangt, fühlt sie neuen Mut
at him arrive.PST.PTCP feels she new courage
erwachen (OMC: KOL1D.5.s15)
awaken
'Having arrived at his place, she feels new courage awakening'
→ Als sie bei ihm angelangt ist, (…)
'When she has arrived at his place, (…)'

(11) Speaking metaphorically, we could say that the sixties culture told men they would find their golden ball in sensitivity (…) (OMC: ROB1E.1.2.s17)
→ If we are speaking metaphorically, (…)

(12) She was wearing a raincoat and spike-heeled boots, her white-blonde hair forming a halo around her face. (OMC: SG1E.5.s112)
→ (…), and her white-blonde hair formed a halo around her face.

Furthermore, the corpus data show that not only English present-participial adjuncts, but also German ones, may denote an event that is not simultaneous with the matrix event, contrary to what König (1995) and Haug et al. (2012) argue (cf.

[7] It would fall outside the scope of this article to go into detail on the specific interpretations of participial adjuncts and their distribution in the two languages, but see Kortmann (1991, 1995) and Brodahl (2016, 2018) for detailed corpus-based accounts of the interpretations (some of) these adjuncts express in English and German, respectively.

Sect. 2). Compare the following corpus examples, which denote events or states preceding (cf. (13)) or following (cf. (14)) the matrix event (see also Sect. 6.2):[8]

(13) Ursprünglich im Ostteil des Herzogtums
originally *in.the* *eastern.part* *the.GEN* *duchy*
Bayern liegend, gehörte der Ort seit
Bavaria *lie.PRS.PTCP* *belonged* *the* *area* *since*
dem 12. Jahrhundert zum Herzogtum Österreich.
the *12th* *century* *to.the* *duchy* *Austria*
(DeReKo: WPD/KKK.02967)
'Originally located in the eastern part of the duchy Bavaria, the area belonged to the duchy of Austria from the 12th century.'

(14) Mit drei Sprüngen stand er im Waggon, die
with *three* *leaps* *stood* *he* *in.the* *car* *the*
Ausstattung inspizierend (…)
equipment *inspect.PRS.PTCP*
(OMC: THH1D.3.s16)
'He was in the car in three leaps, inspecting the equipment'

The cross-linguistic similarities carry over to the domain of internal structure, which will be the focus for the remainder of this article. As argued in the introduction, participial adjuncts are characterised by their clause-like nature. Contrary to what König and van der Auwera (1990) and König (1995) claim (see Sect. 2), this does not seem to be limited to participial adjuncts in English, as adjuncts of both languages in the corpus usually contain one or more constituents in addition to the participle. These are the same across the two languages and include complements and adjuncts of various kinds, as the following examples show:

(15) When doing $[\text{this}]_{\text{OBJ}}$ $[\text{last summer}]_{\text{ADV}}$, I found to my amazement a whole langoustine who sadly had not been trained to crawl backwards.
(cf. BNC: G2E 2476)

(16) $[\text{Höflich}]_{\text{ADV}}$ [nach Details ihres $\text{Lebenslaufs}]_{\text{PREP.OBJ}}$ gefragt,
politely *about* *details* *her.GEN* *career* *ask.PST.PTCP*
erzählte sie, daß (…) (OMC: HEB1D.2.s46)
explained *she* *that*
'When asked politely about the details of her career, she explained that (…)'

This is a clear indication that participial adjuncts in both English and German have a clause-like structure, even though the non-participial elements do not (co-)occur quite as frequently in the German corpus examples as in the English ones. In fact, some of the non-participial elements these adjuncts contain are constituents that are

[8] In fact, similar examples can be found in Behaghel (1924, 391f.), Paul (1968, 68), Bungarten (1976, 189ff.), Helbig (1983, 210), Dittmer (1983, 100ff.).

arguably generated in high structural positions of a clause. First, the participle can be modified by adverbials with a wide syntactic and semantic scope, such as the speaker-oriented adjuncts in the following examples:

(17) Die Politik der Deutschen *sozusagen* vorwegnehmend,
the politics of.the Germans so.to.speak anticipate.PRS.PTCP
führten die Milizionäre (…) bereits umfangreiche
carried the militia.men already extensive
Verhaftungen durch.
arrests out
(OMC: SW1D.4.s31; see also Brodahl 2016, 40)
'The militia was already carrying out extensive arrests, so to speak anticipating the politics of the Germans.'

(18) The programme suggested that maybe the Babes were based on the Princes in the Tower, *allegedly* murdered by Richard III. (BNC: AA2 102)

Second, just like clauses, they can contain sentential negation, as in (19)–(22):[9]

(19) When knitting with more than two colours and *not* having a colour changer I found that (…) the colour I was knitting always became entangled with the others not in use. (BNC: CK3 200)

(20) Throughout the park, ancient oaks (…) play host to large numbers of insects, including several rare species of beetles *not* known elsewhere in the country. (OMC: SUG1E.4.4.s3)

(21) Godai lässt sich auf den Spaß ein,
Godai lets REFL on the joke in
nicht ahnend, welche Verwechslungen und Folgen
not know.PRS.PTCP which confusions and consequences
er damit heraufbeschwört (DeReKo: NON08/JUL.10019)
he thereby evokes
'Godai gets in on the joke, not having any idea of the confusion and consequences he thereby evokes.'

(22) Obwohl im Programm *nicht* vorgesehen,
even.though in.the programme not foresee.PST.PTCP
kam das neue Fahrzeug doch noch
came the new vehicle however still
zu einer richtigen Taufe (DeReKo: A98/JUL.45605)
to a proper baptism
'Though not foreseen in the programme, the new vehicle had a proper baptism.'

[9] That we are dealing with clausal and not constituent negation here is clear from the interpretation of the examples. It is the proposition of the adjunct that is being negated, not a constituent within the adjunct or the adjunct as a whole, as the latter would yield a contrastive interpretation that does not seem to be intended here.

Finally, like adverbial clauses, they can also be introduced by adverbial complementisers of various kinds, as in (23)–(26).[10] The complementisers occurring in the German part of the corpus have a causal (*weil, da,* 'because', cf. (23)), concessive (*obwohl, wenn auch,* 'even though', cf. (24)), conditional (*wenn, falls*, 'if') or comparative (*wie* 'as') interpretation, while those introducing English participial adjuncts are temporal (*after, before, until, when, while*, cf. (25)), conditional (*if,* cf. (26), as well as *whether*), concessive (*though, although*) or comparative (*as*).

(23) Ebenfalls nicht zu übersehen – *weil*
Also not to overlook because
im Dunkeln leuchtend – werden die
in.the dark glow.PRS.PTCP will the
Lichtinstallationen sein (DeReKo: NUN10/JUN.02694)
light.installations be
'The light installations will be equally hard to ignore because they glow in the dark.'

(24) *Obwohl* im Programm nicht vorgesehen, (…) (cf. (22))
'Though not foreseen in the programme, (…)'

(25) *When* knitting with more than two colours and not having a colour changer (cf. (19))

(26) An Utz, he insinuated, even *if* tainted with alien blood, should at once assume the uniform of the Wehrmacht. (OMC: BC1E.4.s75)

The occurrence of speaker-oriented adverbials, negation and complementisers indicates that German and English participial adjuncts must be able to project structure associated with high functional domains of a clause. In Sect. 6, these constituents will be considered evidence that adjuncts with both participles in both languages have a complex internal structure which can—in the case of free participial adjuncts—project all the way up to CP level.

4.2 Cross-linguistic difference 1: the participial predicate

While the previous section argued that German and English participial adjuncts have many (clause-like) properties in common, the corpus data reveal interesting cross-linguistic variation regarding the nature and structural flexibility of the participial predicate. For one thing, the two participial heads to some extent seem to be in complementary distribution in the two languages. While the present participle plays a dominant role in English, the past participle is dominant in German adjuncts (see also König and van der Auwera 1990, 349), a contrast which is especially clear for absolutes. In the corpus of the current study, 62.4% of the German adjuncts have

[10] In some accounts (Emonds 1976, 1985; Johnson 1988), these subordinators are considered to be prepositions rather than complementisers when they introduce a participial adjunct. For a discussion of this, see Sect. 6.3.

a past-participial predicate, and for absolutes the share of past-participial predicates is as large as 76.7% (see Table 1). In English, it is the other way around, with present-participial adjuncts making up 66.5% of the total corpus and 71.4% of the absolutes.[11] The dominance of one participle over the other is also reflected in how adjuncts with the two predicate types are used in the two languages, in that certain interpretations seem to be largely limited to adjuncts with the dominant head. While English mainly employs the present participle in quasi-formulaic constructions interpreted as speaker-oriented adjuncts, similar constructions are typically headed by the past participle in German:

(27) Speaking metaphorically, (…) (= (11))

(28) Es geht um die Wurst, genau gesagt um die Currywurst.
it is about the sausage precisely say.PST.PTCP about the currywurst
(DeReKo: RHZ09/JAN.20680)
'It's all about the sausage, more precisely the currywurst.'

Furthermore, the dominance of the present participle in English and the past participle in German can be linked to the flexibility of the argument-structural domain of the two participles in the respective languages. In German, present-participial adjuncts are restricted to active predicates, as shown in the examples taken from Bungarten (1976, 129f.) in Sect. 2, repeated in a modified version in (29). English present-participial adjuncts, on the other hand, can also have a passive internal structure, as in (30)–(31):

(29) * von einer Kugel getroffen werdend/ worden seiend (cf. (7))
by a bullet hit.PST.PTCP be.PRS.PTCP be.PST.PTCP be.PRS.PTCP
'being/having been hit by a bullet'

(30) TV beauty Kathy Pitkin is devastated after being axed from the BBC's struggling soap Eldorado. (BNC: CH6 6916)

(31) Having been shown the way, others added their agreement, though Dr. Lord remained silent. (OMC: AH1E.2.5.s83)

For past participles, it is the other way around: In German, past-participial adjuncts can involve a variety of predicates, as Helland and Pitz (2012, 2014) explore in detail. While most of these adjuncts in the corpus are derived from transitive verbs (see e.g. (24), (26)), they can also have an unaccusative predicate:

[11] This is comparable to the distribution of the two participles reported for the German corpora of Rath (1971), Filipović (1977) and Kwaśniak (2012), as well as the English corpus of Kortmann (1991).

(32) Bei ihm angelangt, fühlt sie neuen Mut erwachen (=(10))
at him arrive.PST.PTCP feels she new courage awaken
'Having arrived at his place, she feels new courage awakening'

In English, however, past-participial adjuncts with an unaccusative predicate are not acceptable. Instead, a complex predicate additionally containing the present-participial form of auxiliary *have* must be used here, as (33) shows:

(33) *(Having) arrived in Paris, John hurried to the nearest crêperie.

This indicates that the argument-structural domain is less flexible in English past-participial adjuncts than in German ones, while present-participial adjuncts are more flexible in this respect in English than in German. The various argument-structural properties of the two participles will be explored from a formal perspective in Sect. 6.1.

A third difference has to do with the (im)possibility of adjuncts with a complex predicate involving the present-participial form of an auxiliary verb. As mentioned in Sect. 2, a complex predicate is said to be excluded for German participial adjuncts because the present-participial forms of auxiliary *haben* 'have', *sein* 'be' and *werden* 'be (passive)' are practically obsolete in German.[12] English present-participial adjuncts, on the other hand, can include both perfective *having* and

[12] Interestingly, while no constructions with the present participial forms of *haben* or *sein* occurred naturally in the corpus, a search for the present participle *habend* in the main archive (Archiv W) of the German Reference Corpus yields around 475 small-clause structures with this head. In this sample, *haben* functions both as an auxiliary and as a main verb, as examples (i)–(ii) demonstrate:

(i) Dies gesagt habend kommen wir
this said have.PRS.PTCP come we
zum nächsten Punkt: (…) (DeReKo: P17/MAR.00968)
to.the next point
'Having said this, we come to our next point: (…)'

(ii) Keine Ahnung habend, ob unser
no idea have.PRS.PTCP if our
Kind ein Junge oder ein
child a boy or a
Mädchen wird, wollte ich den
girl will.be wanted I the
Kinderwagen weder in Blau noch
pushchair neither in blue nor
in Rot.
in red
(DeReKo: NKU07/JAN.05078)
'Having no idea whether our child will be a boy or a girl, I wanted the pushchair in neither blue nor red.'

While most German native speakers I have consulted judge these constructions as strongly marked or unacceptable, it would be interesting to test their acceptability more formally. As the majority of the hits are from newspaper texts from the last 2 decades, one could hypothesise that such adjuncts are becoming more acceptable, possibly due to influence from equivalent English adjuncts headed by *having*. This seems to be less of a tendency for the participial form *seiend*, which only very rarely occurs as the head of an adjunct in the German Reference Corpus and is judged as clearly unacceptable by my informants.

passive *being*. This also explains why German present-participial adjuncts can only have an active structure, as we saw above: Without a passive auxiliary to host the present-participial morphology, as in the English examples in (30)–(31), there can be no present-participial passive construction. However, the absence of *habend, seiend* and *werdend* does not mean that German present-participial adjuncts can never have a complex predicate, contrary to what is claimed by Kortmann (1988), Bungarten (1976) and König and van der Auwera (1990) (see Sect. 2). A periphrastic participial predicate is in fact licit in German when the auxiliary is a modal verb, as in (34).[13] This is not possible in English, where other modal expressions must be used instead, as the translation indicates:

(34) So hecheln sie durch die Natur, den
so *pant* *they* *through* *the* *nature* *the*
Vogelgesang nicht hören *wollend*, die Blumen
birdsong *not* *hear* *want.PRS.PTCP* *the* *flowers*
in den richtigen Farben nicht
in *the* *right* *colours*
sehen *könnend* (…)
see *could.PRS.PTCP*
(DeReKo: P16/APR.01045)
'And so they pant their way through nature, not wanting to hear the birdsong, not being able to see the flowers in their right colours'

So it seems that both languages do in fact employ present participial adjuncts with a complex predicate, but they differ in the *type* of complex predicate they allow: While English can only generate complex participial predicates with perfective and passive auxiliaries, German only allows for complex predicates containing the present-participial form of modals. Interestingly, this seems to have more to do with the (non-) existence of the participial forms themselves than with structural possibilities, as the present-participial forms of *haben* and *sein* in German are also judged to be unacceptable or at least clearly marked when they appear as a main verb in a small clause headed by the present participle. In English, on the other hand, modals simply do not have non-finite forms. Here it seems the morphological inventories of the two languages prevent certain types of structures from being generated.

[13] My native German informants consider adjuncts with the present-participial form of a modal to be more marked (or 'archaic') than constructions with other participial heads, but not generally unacceptable. A search for the present-participial form of German modals in Archiv W of the German Reference Corpus returned 291 such constructions in adjunct function (of which only a small number is included in the corpus of the present study).

4.3 Cross-linguistic difference 2: the overt subject of absolutes

The subject of absolute participial adjuncts is another important area for cross-linguistic variation between English and German. First of all, there seems to be a semantic restriction on the type of subject German absolutes (with all types of predicates, including participial ones) allow (cf. Kortmann 1988, 69; Fabricius-Hansen and Haug 2012, 25; Fabricius-Hansen et al. 2012, 81; Brodahl 2020, 263ff.). In the German absolutes in the corpus, the subject consistently stands in a part-whole relationship to an antecedent in the matrix clause. This antecedent is usually the matrix subject, as in (35), but it can also refer to the matrix object, as in (36). (Note that the indices in the examples do not denote strict co-reference here, but rather this part-whole relationship.) The absolute subject denotes either a body part or a possession of this antecedent, as in (35), or a subset of a plural antecedent, as in (36). In the following, absolutes with the former interpretation will be referred to as pertinence absolutes and constructions of the latter type will be called distributive absolutes, in accordance with the terminology used in Fabricius-Hansen and Haug (2012) and Brodahl (2020).

(35) Bald standen [die Besucher]$_i$ in dem Gotteshaus, [den Kopf]$_i$
soon stood the visitors in the church the.ACC head
in den Nacken
in the neck
gelegt. (cf. DeReKo: NUN07/AUG.03115)
put.PST.PTCP
'Soon the visitors stood in the church, their heads bent backwards'

(36) Die vier Fotos zeigen [vier männliche Jugendliche]$_i$,
the four photos show four male youths
[drei davon]$_i$ tot, [einer (Lenis Sohn)]$_i$
three of.them dead one.NOM Leni's son
noch lebend. (cf. OMC: HEB1D.1.s138)
still live.PRS.PTCP
'The four photos show four young men, three of them dead, one (Leni's son) still alive.'

In the English part of the corpus, on the other hand, there seems to be no such restriction on the absolute subject. Both the pertinence and distributive interpretations occur frequently in English as well, as exemplified by (37) and (38), respectively (see also Hasselgård 2012). In fact, the pertinence relation is even clearer here due to the possessive determiner of the absolute subject in (37).

(37) "You've changed your mind, at any rate," said $Bert_i$, [his_i head] occasionally moving from side to side as if in disbelief, his eyes staring. (OMC: DL2E.1.s262)

(38) [He and $I]_{i+j}$ rambled off, I_j poking with a stick at every mound and hole for what treasures I did not know (OMC: NG1E.4.s56)

Additionally, however, English absolutes can occur with a subject that is independent of any referents in the matrix clause, as in (39)–(40). Equivalent German constructions do not seem to be acceptable, as (41)–(42) show:[14]

(39) It was hot outside, the mid-afternoon sun burning palely through a thin screen of clouds. (OMC: WB1E.3.s271)

(40) Since yesterday, public transport has been shut down, with residents told not to leave the city. (https://www.bbc.com/news/world-asia-china-51231593)

(41)	*Draußen	war	es	heiß,	die	Nachmit- tagssonne
	outside	*was*	*it*	*hot*	*the*	*afternoon.sun*
	bleich	durch	eine	dünne	Wolkendecke	brennend.
	palely	*through*	*a*	*thin*	*cloud.screen*	*burn.PRS.PTCP*

(42)	*Seit	gestern	ist	der	öffentliche	Verkehr
	since	*yesterday*	*is*	*the*	*public*	*transport*
	eingestellt,	mit	den	Einwohnern	gebeten,	die
	shut.down	*with*	*the.DAT*	*residents.DAT*	*tell.PST.PTCP*	*the*
	Stadt	nicht	zu	verlassen.		
	city	*not*	*to*	*leave*		

Case is another aspect in which English and German absolutes display significant differences. Brodahl (2020) notes that in German, there is a correlation between the case of the subject of a participial absolute and the semantic relation that holds between this subject and the matrix antecedent. While the pertinence absolutes consistently occur with a subject in the accusative case, the distributive

[14] A possible exception can be found in adjuncts of the following kind:

(i) Dies gesagt, muss auch erwähnt werden, dass (…) (DeReKo: NZZ10/JUL.02922)
this say.PST.PTCP must also mentioned be that
'That said, it must also be mentioned that (…)'

This construction could be analysed as an absolute with a semantically independent subject. However, this is limited to a handful of formulaic conditional or temporal adjuncts and thus does not seem to be a productive pattern in contemporary German (but see, e.g., Blatz 1900, 621f.; Paul 1959, 278ff.; Annema 1924, 33; Curme 1974, 553 for examples of less formulaic adjuncts of this kind in older German).

constructions have a nominative subject, as the examples in (35)–(36) illustrate, repeated here for convenience:[15]

(43)	den	Kopf	in	den	Nacken	gelegt
	the.ACC	*head*	*in*	*the*	*neck*	*put.PST.PTCP*
(44)	einer	(Lenis Sohn)			noch	lebend
	one.NOM	*Leni's son*			*still*	*live.PRS.PTCP*

Building on Høyem (2018b, 135, 2019), Brodahl (2020) suggests that the semantic and morphological difference between pertinence and distributive adjuncts in German can be further linked to a structural difference between the two types of absolutes, an analysis which I will return to in Sect. 7.2.

For English, on the other hand, the picture regarding case is less clear. It seems that English absolutes may occur with a subject in either the nominative or the accusative, regardless of the interpretation of their subject. The corpus data are not particularly useful here, as case is only distinguishable in absolutes with a pronominal subject in English, something which only occurs twice in the corpus of the current study. One of these examples is (38) above, and in both examples the

[15] Helland and Pitz (2014), on the other hand, argue that German present-participial absolutes always occur with a nominative DP as their subject. Interestingly, they base this conclusion on the example in (i), where the morphological case of the subject is in fact ambiguous:

(i) Und starrte eingehend auf jeden einzelnen Kutscher, der hocherhobenen Hauptes
and stared intently at every single coachman who highly.raised head.GEN
auf dem Kutschbock saß, die Peitsche auf dem Knie ruhend.
on the coach.box sat the whip on the knee rest.PRS.PTCP
'And stared intently at each coachman who sat straight and proud with a whip resting against his knee.'

(cf. Helland and Pitz 2014, 235)

Taking the argument-structural properties of the verb underlying the participle as evidence that nominative must be the relevant case, they argue: "However, 'ruhen' 'to rest' being an unergative verb, the DP must be interpreted as the subject, hence as a nominative DP" (Helland and Pitz 2014, 236). However, the many German absolutes occurring with an accusative subject in the corpus of the present study indicate that such a direct link between syntactic function (subject) and case cannot be drawn for absolutes, a point I will return to in Sect. 7.2. Furthermore, when the case-ambiguous feminine DP in example (i) is replaced by a masculine DP with unambiguous case, the accusative is preferred, as shown in (ii) and the authentic example in (iii):

(ii) (…), den Arm / ?der Arm auf dem Knie ruhend.
the.ACC arm the.NOM arm on the knee rest.PRS.PTCP

(iii) Während der Messung sollte der Patient sitzend, den Rücken
during the measurement should the patient sit.PRS.PTCP the.ACC back
angelehnt und den Arm auf dem
lean.PST.PTCP and the.ACC arm on the
Tisch ruhend verweilen.
table rest.PRS.PTCP stay
(https://www.thieme-connect.de/products/ebooks/lookinside/10.1055/b-0034-42350)
'During the measurement, the patient should remain seated with his back leaning against the chair and his arm resting on the table.'

subject is in the nominative and has a distributive interpretation. However, Jespersen (1961, 49) provides several examples of absolutes with an accusative subject (cf. (46)–(47)), and the native speakers I have consulted strongly prefer the accusative over the nominative in all three types of absolutes described above, i.e. pertinence absolutes (45), distributive absolutes (46) and absolutes with an independent subject (47).

(45) He/Him sitting next to her, she felt safe.
(46) As we strode along, I/me doing my best to keep pace with him, and he/him reading aloud from some political economist or other, he would drag out a handful of nuts and munch them. (cf. Jespersen 1961, 49)
(47) But you see, he/him being here, in the room – I had to be careful. (ibid.)

The preference for the accusative is surprising given the two corpus examples with the nominative and considering that the nominative is claimed to be the dominant case in absolutes in prescriptivist accounts such as Huddleston and Pullum (2002, 1191), "with the accusative a somewhat marginal alternant in informal style". As a reviewer notes, the native-speaker judgments may have to do with the accusative being the default case in English, a point I will return to in Sect. 7.2. In any case, these judgments indicate that the claim that the nominative is the dominant case for English absolutes can only be upheld on normative grounds, as argued by both Jespersen (1961, 48ff.) and Kortmann (1991, 22ff.) as well. Instead, it appears that accusative case is the norm in absolutes today and that the occasional nominative is a result of hypercorrection, something which according to Jespersen (1961, 46f.) first occurred because the noun phrase "preceded the participle […] and […] was felt to be the subject" (see also Lee 1987, 643). In the analysis of these absolutes in Sect. 7.2, I will assume that the accusative is the unmarked case for all English absolutes today.

Regardless of the case variation discussed here, it is clear from the native-speaker judgments of the examples in (45)–(47) that the correlation between absolute type and case observed in the German data (pertinence → accusative, distributive → nominative) does not hold for English absolutes. This, however, does not necessarily mean that all English absolutes have the same internal structure. In Sect. 7.2, the analysis proposed by Høyem (2018b, 2019) and Brodahl (2020) for pertinence absolutes in German will be extended to pertinence absolutes in English. And as will become clear in the next section, there is another difference between English and German absolutes that has consequences for the analysis of their internal structure.

4.4 Cross-linguistic difference 3: augmentation of absolute participles

A final cross-linguistic difference concerns absolute participles introduced by the preposition *with/mit*, often referred to as 'augmented' absolutes in the literature

(e.g., Kortmann 1991, 1995; Fabricius-Hansen et al. 2012).[16] Both English and—at least to some extent[17]—German participial absolutes occur with this type of augmentation, as (48)–(49) show:

(48) [Ich schlief] vor lauter Erschöpfung *mit* dem
I fell.asleep from sheer exhaustion with the.DAT
Kopf am Vordersitz lehnend ein. (DeReKo: U10/APR.02631)
head on.the front.seat lean.PRS.PTCP PTCL
'I fell asleep from sheer exhaustion with my head leaning on the front seat.'

(49) Mrs Wormwood sat munching her meal *with* her eyes glued to the American soap-opera on the screen. (OMC: RD1E.2.s94)

Many have noted the semantic parallel between constructions like these and the absolutes in (35) and (37), i.e. that a pertinence relation holds between the absolute subject and a matrix antecedent in both cases (e.g., Andresen 1854; Jespersen 1961; McCawley 1983; Kortmann 1988; Businger 2011; Fabricius-Hansen et al. 2012; Høyem 2019; Brodahl 2020). Some draw a further parallel between the semantics of the preposition *with*/*mit* in these constructions and main verb *have*/*haben*; see, e.g., Jespersen (1961, 38), McCawley (1983) and Quirk et al. (1985, 704f.) for English and Businger (2011) and Høyem (2019) for German. As Jespersen (1961, 38) puts it, "*with* means nearly the same thing as the participle *having*". This leads him, McCawley (1983), Businger (2011) and Høyem (2019) to suggest that bare absolutes, *with*/*mit*-absolutes and the complement of main verb *have*/*haben* are all small-clause constituents. Høyem (2019) proposes that these small clauses are generated in the complement position of a head that can be realised either as a verb (*haben*) or a predicational particle (*mit*/Ø), an analysis which will be adopted for pertinence absolutes in Sect. 7.2.

While all the augmented absolutes in the German part of the corpus are introduced by a *mit* with these characteristics, it seems that English *with* does not necessarily involve pertinence semantics. In many of the English absolutes in the corpus, there is no pertinence relation between the subject of the *with*-absolute and an antecedent in the matrix clause. In fact, it appears that all English absolutes may be introduced by *with*, including those with a distributive or independent subject, as (40) above and the modified versions of (38)–(39) in (50)–(51) show. In German, on

[16] As is well-known, English (present-)participial absolutes may also be introduced by prepositions like *without* and *despite* (see, e.g., Johnson 1988). German participial absolutes, on the other hand, as well as absolutes with non-participial predicates in both languages, may only be introduced by *mit*/*with*. In line with previous work on absolutes, where *with*/*mit* has received special attention as an augmentor (e.g., Jespersen 1961; McCawley 1983; Reuland 1983; Lee 1987; Kortmann 1991, 1995; Pires 2006, 2007; Businger 2011; Fabricius-Hansen et al. 2012; van de Pol and Petré 2015; Høyem 2019), only adjuncts introduced by *with*/*mit* are considered here.

[17] The acceptability of *mit*-absolutes with a participial predicate has been questioned (cf. Kortmann 1988, 70f.; Businger 2011, 60f., 326), and my corpus only contains 31 such adjuncts. As Høyem (2019, fn. 4) and Brodahl (2020, 265) note, however, these adjuncts seem to be more acceptable when they are complex, i.e. contain at least one constituent in addition to the subject DP and the participle, as is the case in (48).

the other hand, distributive absolutes may not be introduced by *mit*, as (52) demonstrates.

(50) (…), *with* me poking with a stick at every mound and hole (…)
(51) (…), *with* the mid-afternoon sun burning palely through a thin screen of clouds.

(52) Die	vier	Fotos	zeigen	vier	männliche	Jugendliche,
the	*four*	*photos*	*show*	*four*	*male*	*youths*
(*mit)	drei	davon	tot,	(*mit	einem)/	einer
with	*three*	*of.them*	*dead*	*with*	*one.DAT*	*one.NOM*
(Lenis	Sohn)	noch	lebend.	(cf. (36))		
Leni's	*son*	*still*	*live.PRS.PTCP*			

In these examples, *with/mit* is not semantically comparable to main verb *have/haben*. This indicates that English *with* is more flexible with regard to what kind of absolute constructions it may introduce than German *mit*. In Sect. 7.2, the semantic difference between these two types of *with* absolutes will be linked to differences in their internal structure.

4.5 Interim summary

The findings presented above indicate that English and German participial adjuncts have significant properties in common that are largely ignored in the typological literature. In both languages, the adjuncts have a clause-like structure and allow for the same interpretations. They also display a significant amount of syntactic complexity in both languages, both when it comes to which elements they can contain in addition to the participle and regarding the syntactic and argument-structural flexibility of their predicate. At the same time, German and English participial adjuncts differ in terms of which participle is dominant: the present participle in English and the past participle in German. Furthermore, a closer inspection of absolute adjuncts revealed that while German participial absolutes are restricted to two different types which differ in the interpretation and case of their subject, as well as whether or not they allow augmentation by the preposition *mit*, English absolutes pose no semantic restrictions on their subject and may always be augmented by *with*.

In the next sections, an analysis of the internal structure of participial adjuncts in German and English will be proposed, which will link the cross-linguistic similarities and differences described above to the structural possibilities of these adjuncts. The aim of the remainder of the paper is to answer the following three questions, which are crucial for our understanding of participial small clauses cross-linguistically:

1. How clause-like are participial adjuncts structurally; i.e., how much functional structure do they project above the argument-structural domain?
2. How can the internal structure of adjuncts with both participial heads be accounted for, specifically within the framework of Distributed Morphology?

3. How is the subject licensed in both free and absolute adjuncts in the two languages?

Others have of course attempted to answer these questions before, but as noted in the introduction, these works often focus on only a subclass of the constructions and/or only some of the relevant questions. In what follows, I will build on existing work and the data presented in Sect. 4 to propose a comprehensive analysis of participial adjuncts, taking into account their structure from root to CP level from a cross-linguistic perspective.

5 Theoretical assumptions

The analysis to be presented in the coming sections takes as its starting point the minimalist view that clauses have a tripartite structure, consisting of a VP domain, a TP domain and a CP domain. As Haegeman (2012, 7) precisely puts it:

> Each layer […] is associated with a specialized semantics: the lexical domain, here VP, encodes the core properties of the event/state expressed in the sentence: 'who does what to whom,' including the participants in the event or state (e.g., agent, patient, beneficiary). The functional domain TP encodes the localization of the event/state expressed in the VP with respect to temporal, modal, and aspectual properties. The peripheral functional domain CP relates the sentence to its context, which includes the matrix domain for embedded clauses and the discourse domain for root clauses, and encodes among other things illocutionary force and topicalized and focalized constituents […]

See also van Gelderen (2013) and Ramchand and Svenonius (2014) for detailed descriptions of these three domains. A central point to be made in Sect. 6 is that participial adjuncts typically contain all three of these domains, contrary to what one may think about constructions that lack finiteness and often an overt subject, i.e. small clauses.

Furthermore, the analysis is couched within the framework of Distributed Morphology (DM) (e.g., Halle and Marantz 1993; Marantz 1997; Harley and Noyer 1999; Embick and Noyer 2007; Embick 2015), something that will be especially relevant for the analysis of the argument-structural domain of these adjuncts in Sect. 6.1. Within this framework, it is assumed that morphemes, understood as abstract morphosyntactic features, serve as the input to the syntactic operations Merge and Move. This means that the structure-building principles behind word formation and larger syntactic structures are essentially the same, and there is no lexicon in the traditional sense of the word.[18] The morphemes that occupy the terminal nodes of syntactic trees within this theory are either roots, which need to be categorised in the syntax, or abstract (functional) morphemes. I assume that complex word forms such

[18] Note that this syntactic perspective on word formation is not unique to DM, but also characterises other decompositional approaches like mirror theory (Baker 1985; Brody 2000), Borer's (2003 et seq.) exoskeletal model, as well as the analyses suggested in, e.g., Julien (2002), Ramchand (2008) and Lohndal (2014).

as participles are formed by head movement, i.e. adjunction of a categorised root to the head hosting the participial morphology. Importantly, the syntactic operations Merge and Move operate on abstract feature bundles, which are only combined with phonological exponents at Spell-Out.

Participles constitute an empirical domain where the advantages of DM over more traditional lexicalist approaches are particularly clear. As mentioned in the introduction, the category of participles in different syntactic environments has been a topic of much debate ever since Chomsky (1970). In his discussion of different types of nominalisations, Chomsky (1970) showed that gerunds such as *John's refusing the offer* have different and more verb-like properties than so-called derived nominals like *John's refusal of the offer*. This led him to suggest that gerunds involve a recategorisation process from verb to noun taking place in the syntax, while derived nominals are categorised as nouns from the outset (i.e., in the lexicon). For past participles, Wasow (1977) suggested something similar when he argued for a separation between syntactically derived verbal passives on the one hand and lexically derived adjectival passives on the other. Within the lexicalist approaches that emerged in the aftermath of these discussions, the grammar was thus left with two generative components: the lexicon for word-internal (morphological) operations and the syntax (primarily) for word-external operations. But as Marantz (1997) argues, Chomsky's (1970) treatment of nominalisations is just as compatible with a grammar that has only one generative component, namely the syntax, as is assumed within DM (see also Embick 2021). All one needs is the assumption that both initial categorisation and recategorisation take place in the syntax, i.e. that lexical items have no inherent category. The differences between various types of nominalisations and participles can then be explained in terms of which syntactic structures these category-neutral roots occur in (cf. Embick 2021). From a minimalist perspective, it seems preferable to assume that the syntax is the only generative component of grammar, as is done within DM.

Turning to specifics, I assume that the derivation of a basic, transitive sentence starts with a category-neutral root being combined with the verbalising functional head *v*.[19] I follow Marantz (1997) in assuming that *v* comes with event implications (see also Lohndal 2014; Alexiadou et al. 2015). If these event implications involve transitivity, an internal argument (IA below) is generated in the specifier position of *v*.[20] Following Kratzer (1996), the external argument (EA) is introduced by Voice. This yields the following structure in the argument-structural domain of transitives:

(53) $[_{\text{VoiceP}}$ EA $[_{\text{Voice'}}$ Voice $[_{v\text{P}}$ IA $[_{v'}$ *v* Root]]]]

[19] This categorising head will often be a null morpheme, i.e. a zero categoriser, as is traditionally assumed within DM. In the exoskeletal approach of Borer (2003 et seq.), on the other hand, a categoriser is not assumed to be present unless it is associated with a morphophonologically realised derivational morpheme. See Lohndal (2020, to appear) for useful comparisons of DM-based and exoskeletal approaches.

[20] Like Acquaviva (2009), Lohndal (2014) and Alexiadou (2014) among others, I assume that roots do not project. This means that there is no RootP which can host an internal argument in addition to the root. For analyses of participles involving RootP, see e.g. Anagnostopoulou (2003), Embick (2004).

In a passive sentence, on the other hand, Voice lacks a specifier and thus the ability to project an external argument (cf. Bruening 2013, 2014; Alexiadou et al. 2015; Wurmbrand and Shimamura 2017). Like Bruening (2014) and Alexiadou et al. (2015), I assume that so-called verbal passives in English and German are dominated by the projection Pass(ive)P, as in (54), while adjectival passives involve the categoriser *a*, as in (55). These heads host the past-participial morphology.

(54) $[_{\text{PassP}}$ PTCP $[_{\text{VoiceP}}$ Voice $[_{\text{vP}}$ IA $[_{v'}$ *v* Root]]]]
(55) $[_{\text{aP}}$ PTCP $[_{\text{VoiceP}}$ Voice $[_{\text{vP}}$ IA $[_{v'}$ *v* Root]]]]

Section 6.1.2 will argue that adjuncts with the past participle can involve both a verbal and an adjectival passive structure, as first proposed by Helland and Pitz (2012, 2014). It will also be shown that not all adjectival passives are alike structurally. As argued by Alexiadou et al. (2015), the categoriser *a* can be introduced at different levels, resulting in differences in what kind of modifiers these passive adjuncts allow.

For reasons of simplicity, the structural notations in the following sections will be based on the classic X-bar format. In line with traditional assumptions, projections below the CP domain are notated as head-final in German, while all projections in English are right-branching.

6 A structural analysis of the three domains of participial adjuncts

This section will address the first two questions raised in Sect. 4.5, i.e. how clause-like participial adjuncts are and how their internal structure can be accounted for within a DM framework. It will be argued that participial adjuncts contain at least two of the three domains associated with clauses, an argument-structural domain and a TP, while free adjuncts, which constitute the majority of the corpus, also project a CP domain and thus are as clause-like as small clauses can get. Sections 6.1–6.3 will deal with each of these three domains in a bottom-up fashion, starting with the versatile argument-structural domain in Sect. 6.1 and moving on to the TP domain in Sect. 6.2 and finally the CP domain in Sect. 6.3. Section 6.4 will summarise this section and provide tree structures for all three domains of participial adjuncts.

6.1 The argument-structural domain

As the specifics of the argument-structural domain of participial adjuncts are highly dependent on the type of participle they contain, present- and past-participial adjuncts will be treated separately in this section. For reasons of simplicity, the examples provided here will be of free adjuncts, but the derivation of the argument-structural domain of absolutes is assumed to proceed in the same way.

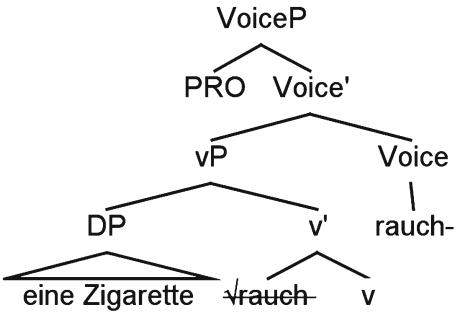
6.1.1 Present-participial adjuncts

The derivation of present-participial adjuncts proceeds much like in a finite sentence in the argument-structural domain. Take the following simple transitive adjunct:

(56) Und so holte die 60-Jährige, eine Zigarette
and so got the 60-year.old.FEM a cigarette
rauchend, ihre Bücher aus
smoke.PRS.PTCP her books from
dem Schlafzimmer. (DeReKo: NON08/JAN.02835)
the bedroom
'The 60 year old woman, smoking a cigarette, got her books from the bedroom.'

Here, a root is combined with a categoriser *v* encoding transitivity, which again introduces an internal argument in its specifier position. Then a Voice head, which is active in example (56), is merged with the structure. Active Voice requires an external argument to be merged in its specifier position, which in the case of the free adjunct in (56) is PRO (see Sect. 7.1). I assume that the root, which is now categorised as a verb but has yet to receive participial morphology (see below), moves to Voice. At this point of the derivation, the structure of (56) looks as follows:

(57)



Present-participial adjuncts with an intransitive (unergative) predicate involve a *v* which does not license an internal argument, while unaccusatives lack a Voice projection entirely (cf. Alexiadou et al. 2015).

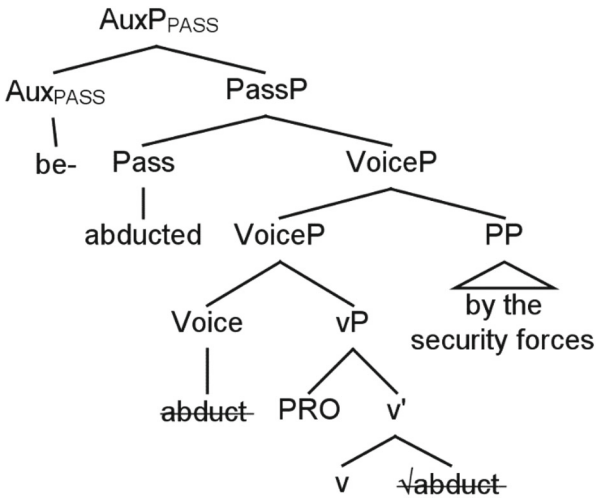
However, as shown in Sect. 4.2, English present-participial adjuncts can also have a passive structure when they are headed by a passive auxiliary, as in (58). This is not possible in German, which disallows the present-participial forms of non-modal auxiliaries (cf. (59)).

(58) Thousands of people have disappeared (…) after being abducted by members of the security forces. (BNC: CJS 254)

(59) * (…) von Mitgliedern der Sicherheitskräfte
by members of.the security.forces
entführt werdend
abduct.PST.PTCP be.PRS.PTCP

As outlined in (54), I assume that verbal passive clauses involve a dedicated passive projection PassP hosting the passive morphology (cf. Bruening 2013, 2014; Alexiadou et al. 2015). Thus, this projection must be present in the participial adjunct in (58). In addition, these adjuncts must contain a projection for the passive auxiliary, here labelled $\text{AuxP}_{\text{PASS}}$. Like Ramchand and Svenonius (2014), I assume that this projection marks the upper boundary of the argument-structural domain (or, in their terms, the event domain). Thus, the argument-structural domain of English present-participial adjuncts may also have a structure like in (60):

(60)



As the two trees above indicate, I assume the verbal root has not yet merged with the present-participial suffix *-ing*/*-end* in the argument-structural domain. The reason for this is that present-participial adjuncts in both languages may also contain auxiliaries originating in the TP domain, which will then carry the present-participial inflection. For English, this involves perfective *have*, while German participial adjuncts allow for the present-participial forms of modals, as the following examples repeated from Sect. 4.2 show.

(61) Having been shown the way, others added their agreement, though Dr. Lord remained silent. (= (31))

(62)

So	hecheln	sie	durch	die	Natur,	den	Vogelgesang
so	*pant*	*they*	*through*	*the*	*nature*	*the*	*birdsong*
nicht	hören	*wollend*	(…)				
not	*hear*	*want.PRS.PTCP*					

(=(34))

'And so they pant their way through nature, not wanting to hear the birdsong'

When such auxiliaries are present, the present-participial suffix will attach to the highest verb. The fact that this can be either a perfective or a modal auxiliary

indicates that the suffix is merged in a structurally high position and thus does not belong in the argument-structural domain. I will return to this point in Sect. 6.2, arguing that the suffix originates in T.[21]

6.1.2 Past-participial adjuncts

As first shown by Helland and Pitz (2012, 2014) for German and French, the syntax of past-participial adjuncts cannot be reduced to a single syntactic structure. Rather, these adjuncts display a variety of structures which are all characterised by the absence of an external argument, and thus it is the internal argument—a theme or an experiencer—which is realised as PRO here (cf. Helland and Pitz 2012, 94).[22] As mentioned in Sect. 4.2, this also includes unaccusative predicates in German, whereas all predicates in English past-participial adjuncts appear to be passive. Building on Embick (2004), Helland and Pitz argue that past-participial adjuncts can be analysed as either dynamic, resultative or stative Aspect projections, where the dynamic structure corresponds to eventive passives and the resultative and stative structures cover both adjectival passives, unacccusative and reflexive[23] predicates. I refer to their work for an extensive discussion of these different types as they define them. The following account builds on the analyses by Helland and Pitz, but differs from them in two crucial ways: First, the analysis will be non-lexicalist, and second, I will take the distinction among adjectival passives made by Kratzer (2000), Anagnostopoulou (2003), Alexiadou and Anagnostopoulou (2008),

[21] An anonymous reviewer suggests an alternative analysis upon which the present-participial suffix is considered to be an Asp head that can merge with different parts of the structure. This would be similar to what Abney (1987), Kratzer (1996) and Alexiadou (2013) suggest for English gerunds in argument position, where *-ing* is seen as a nominaliser. It would also be parallel to the analysis proposed for adjectival past-participial adjuncts in Sect. 6.1.2, where the past-participial suffix is argued to stativise different levels of the structure. While this is an interesting analysis, I will not adopt it here, the main reason being that it is unclear to me what the function of such an Asp head would be, as it can hardly be analysed as either a nominaliser or a stativiser in these adjuncts, nor does it necessarily encode imperfectivity, as will be shown in Sect. 6.2 (see also the examples above with perfective *having,* e.g. (61)). Furthermore, it is not clear to me what would restrict which elements of the structure this Asp can merge with, whereas the passive past-participial suffix is consistently merged within the argument-structural domain (see Sect. 6.1.2).

[22] Note that Helland and Pitz (2012, 2014) assume the subject of participial adjuncts to be *pro*, and not PRO, with control redefined as movement following Hornstein (1999 et seq.) (Helland and Pitz 2012, fn. 6).

[23] As Helland and Pitz (2012, 119f.) point out, German (and French) past-participial adjuncts may also have a reflexive predicate. In their brief discussion of such adjuncts, they argue that their structure is comparable to that of unaccusatives. However, both the examples cited by Helland and Pitz and most reflexive participles in the corpus of the current study are semantically rather than syntactically reflexive (cf. Alexiadou et al. 2015). As argued by Alexiadou et al. (2015, 106), semantically reflexive verbs have a structure comparable to that of regular transitive verbs. For this reason, I will not discuss reflexive participles further here, but consider the passive analyses given below to apply to these predicates as well.

Alexiadou et al. (2014), Alexiadou et al. (2015) as a starting point, which is more fine-grained than that of Embick (2004).[24]

Just like finite passives, passive past-participial adjuncts can be of different types, something which is reflected in what kind of modifiers they allow. Many of the adjuncts in the corpus are eventive passives, which occur with all kinds of event- and agent-oriented modifiers, as shown in (63)–(64).

(63) Confronted by the Leviathan, Job declares that he had lacked knowledge. (OMC: HB1E.1.s232)

(64) Er plante, wie bereits 1923 von
he planned as already 1923 by
Reichsprä sident Friedrich Ebert (SPD) vorgemacht,
president Friedrich Ebert (SPD) demonstrate.PST.PTCP
die Reichswehr in Preußen einzusetzen (…)
the military in Prussia to.employ
(DeReKo: WPD/PPP.08476)
'He planned to employ the Reichswehr in Prussia, as already demonstrated by President Friedrich Ebert (SPD) in 1923.'

Others denote resultant states, as in (65)–(66), which are irreversible states resulting from a preceding event, and which allow modifiers referring to the agent of this event, such as the *by*- and *von*-phrases in these examples (cf. Kratzer 2000; Alexiadou et al. 2015, 152ff.).

(65) Written by Kathleen Kinder for lace enthusiasts, the ten chapters cover all aspects of the technique. (BNC: CGV 25)

(66) [D]a war oft der Stern - nachlässig
there was often the star carelessly
gekritzelt, wie von einem
scribble.PST.PTCP as.if by a
Kind gezeichnet (…) (DeReKo: U95/DEZ.84440)
child draw.PST.PTCP
'There the star often was, carelessly scribbled, as if drawn by a child.'

Finally, some past-participial adjuncts are target-state passives, as in (67)–(68), which denote a reversible state and allow only modifiers that "modify the state directly" and not the event leading up to the state (Alexiadou et al. 2015, 145; see also Rapp 1996; Schlücker 2005; Gehrke 2011, 2012). An example of such a modifier is the non-agentive *by*-phrase in (67).[25] These differences in modification

[24] While Embick (2004) distinguishes between resultatives and statives among adjectival passive participles, Kratzer (2000) argues that resultatives can be further divided into participles denoting an irreversible state (resultant-state passives) and participles denoting a reversible state (target-state passives). See Alexiadou et al. (2015, 153) for a useful comparison of the passive types proposed by Kratzer (2000) and Embick (2004).

[25] Helland and Pitz (2012, 109) also point out that many past-participial adjuncts in French and German contain PPs that can be mistaken for agent phrases, but in fact "express causes, instruments, stimuli, or locational circumstances".

are related to where exactly stativisation takes place in the derivation, as we will see shortly.

(67) Mesmerised by hunger, I followed the man to the dining table. (OMC: BO1E.1.7.s8)

(68)

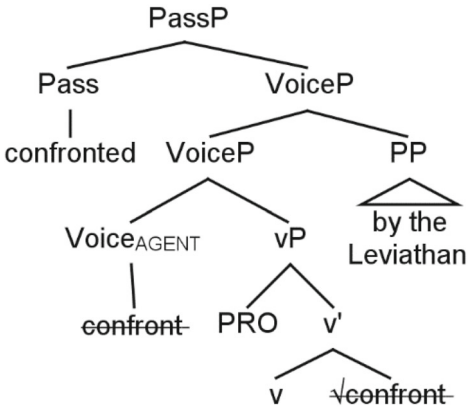
Nur	mit	Nachtwäsche	bekleidet	harrten
only	*in*	*nightwear*	*dress.PST.PTCP*	*waited*
die (…)	Eltern (…)	stundenlang	auf	dem
the	*parents*	*for.hours*	*on*	*the*
Dach (…)	aus.	(DeReKo: M06/MAR.20006)		
roof	PTCL			

'Only dressed in their nightwear, the parents waited on the roof for hours.'

The eventive passive is traditionally referred to as the verbal passive, while resultant states and target states are subsumed under adjectival passives. In German finite sentences, this is reflected in the passive auxiliary they combine with; while the eventive passive takes *werden*, resultant and target states occur with *sein*.

As for the past-participial adjuncts with a verbal passive structure, I assume these are generated as described in Sect. 6.1.1 for passive present-participial adjuncts, only without the present-participial passive auxiliary. This involves PassP selecting an agentive VoiceP without a specifier, to which an agent-PP can be adjoined, as in the following representation of (63):

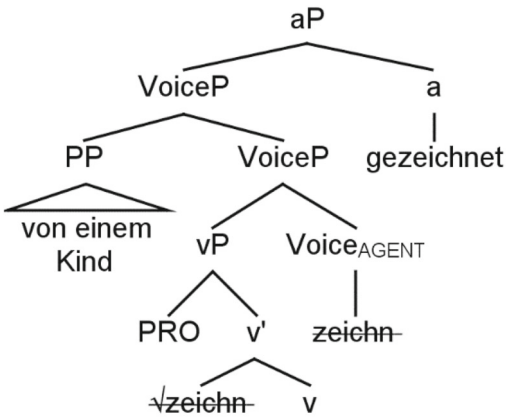
(69)



Adjectival passives, on the other hand, are generated when the categorising head *a* is merged with the structure (cf. Bruening 2014; Alexiadou et al. 2015). Like Bruening (2014, 388). I assume that *a* both re-categorises and stativises its complement. As Alexiadou et al. (2015) show, this can happen at different levels of the structure, resulting in the above-mentioned differences in what kind of modifiers the passives allow. If the stativiser is introduced above VoiceP, as Alexiadou et al. (2015) argue is the case for resultant-state passives, the structure of the adjectival passive is largely similar to its verbal counterpart. Here as well, the Voice projection encodes

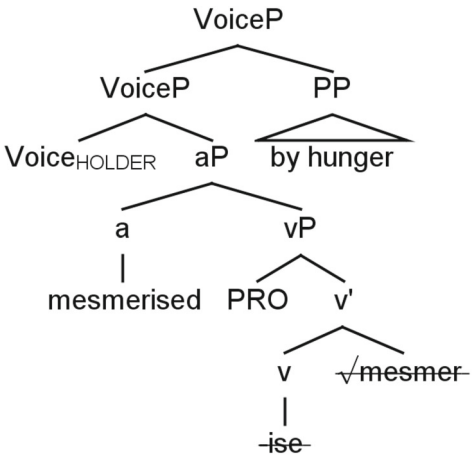
an implicit agent, and an adjoined PP referring to this agent is therefore licit. The second half of the resultant-state adjunct in (66) can thus be represented as follows:

(70)



The stativiser can also be introduced at an earlier point of the derivation, i.e. directly above vP, as is arguably the case for the target-state passives in (67)–(68). While Alexiadou and Anagnostopoulou (2008) argue that such passives lack a VoiceP entirely in English and German because agent-oriented modifiers are excluded from these structures, Alexiadou et al. (2015) show that this cannot be the case as long as they can contain other Voice-related modifiers such as the non-agentive *by*-phrase in (67). Differently from verbal and resultant-state passives, however, the Voice layer in target passives is merged only after the structure has been stativised. For this reason, Voice introduces the theta role of holder, and not agent, and only non-agentive *by*-/*von*-phrases are allowed (cf. Alexiadou et al. 2015, 144 f.). See the following structural representation of (67):[26]

(71)



[26] For target-state passives, Alexiadou et al. (2015, 197), assume both an AspP and an aP layer above v. However, they note that "it is possible that the two heads are conflated" (ibid.), as I assume here for simplicity's sake.

This shows that passive past-participial adjuncts in German and English can be built from at least three different structural templates that yield either verbal or adjectival structures.[27] It also shows that a passive auxiliary is not necessary to generate a passive interpretation, as the passivisation (or stativisation) process yielding the past-participial form takes place already in the argument-structural domain. If a passive auxiliary is included as well in a participial adjunct, it must appear in the present-participial form, which is only possible in English and not in German (cf. Sect. 4.2). This indicates that the two participles involved in participial adjuncts belong to separate domains—the present participle to the TP domain and the past participle to the argument-structural domain, a point I will return to in Sects. 6.2 and 6.4.

In German past-participial adjuncts, however, the argument-structural domain is even more flexible. As shown above, these adjuncts can also be formed from unaccusative predicates (see also Helland and Pitz 2012, 2014). On closer inspection, the distinction between stative/adjectival and eventive/verbal structures appears to be relevant here as well. It seems that some of these unaccusative adjuncts denote events, seeing as examples like (72) allow event-related modifiers such as temporal and spatial adjuncts. Other adjuncts, such as the one in (73), seem to denote a (target) state instead:

(72) In Alt St. Johann noch bei schönem Wetter
in Alt. St. Johann still in good weather
angekommen, stieg man auf die Sesselbahn um.
arrive.PST.PTCP changed one to the chairlift PTCL
(DeReKo: A08/DEZ.06686)
'Having arrived in Alt. St. Johann while the weather was still good, we changed to the chairlift.'

(73) Die Mitarbeiterin Barbara Bailey hockt tief
the employee Barbara Bailey sits deeply
versunken (…) auf dem Massagestuhl.
immerse.PST.PTCP on the massage.chair
(DeReKo: BRZ09/MAI.09239)
'The employee Barbara Bailey is sitting on the massage chair, deeply immersed.'

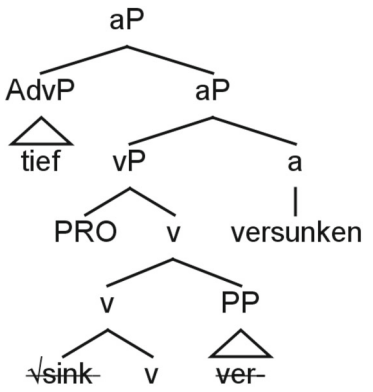
I suggest that the structure for the unaccusative in (73) is similar to that of target-state passives, with a stativising head *a* attaching above vP.[28] Here, however, the

[27] Kratzer (2000), Alexiadou and Anagnostopoulou (2008) and Alexiadou et al. (2015) briefly discuss a third type of adjectival past participles as well, namely those referred to as "lexical". These are formed from roots that appear to be categorised as adjectives as soon as they are put into the structure, lacking both *v* and Voice. See also Embick's (2004) analysis of "stative" participles.

[28] This is similar to the analysis proposed by Helland and Pitz (2012, 125ff.) for the unaccusative past-participial adjuncts they refer to as "stative".

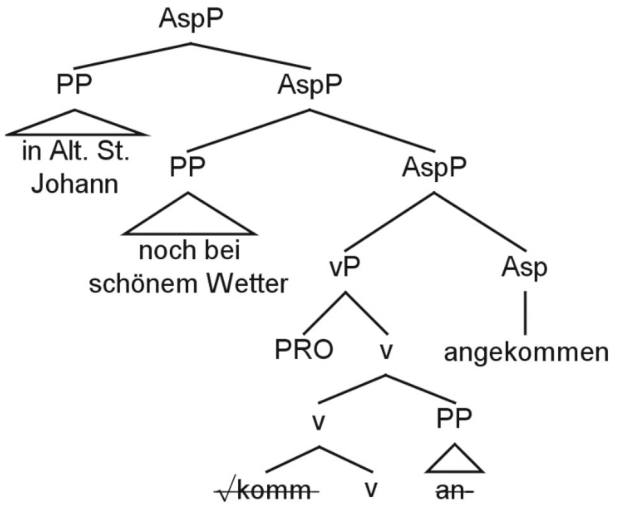
Voice domain is absent, as in finite unaccusative structures (cf. Alexiadou et al. 2015):

(74)



Eventive unaccusatives, on the other hand, involve perfectivity. Here, a perfective AspP is merged with vP, generating a perfective and eventive reading:

(75)



In sum, we see that the argument-structural domain of past-participial adjuncts can be structured in many different ways, especially in German. While all of these adjuncts have in common that they lack an external argument, they differ in whether this is due to the presence of a non-active Voice projection, as in verbal and adjectival passives, or the absence of a Voice projection entirely, as in German unaccusatives.

6.2 The TP domain

Several characteristics of participial adjuncts indicate that they must contain a TP in addition to the argument-structural domain described above. The same has been argued for present-participial adjuncts in several languages (see Bowers 2001, n. 7; Pires 2006, 2007; Thurén 2008; Ojea 2011; Helland and Pitz 2012, 2014), but interestingly not for adjuncts headed by a past participle. However, in the following I will show that elements associated with the TP domain can occur in participial adjuncts with both participles.

For one thing, participial adjuncts encode semantic tense, i.e. can have a tense interpretation which is independent of that of the matrix clause, as indicated already in Sects. 2 and 4.1. Turning to present-participial adjuncts first, it has been pointed out by Stump (1985), Egerland (2002) and Pires (2006, 2007) that English present-participial adjuncts are neither dependent on matrix tense, nor can their tense interpretation be "induced by purely aspectual properties" (Egerland 2002, 81).[29] Rather, while they typically denote events that are simultaneous with the matrix event, they can also express events taking place before or after it, as the corpus examples in (76) and (77) illustrate. Consequently, they can have both an imperfective and a perfective interpretation. As was argued in Sect. 4.1, the same holds for German present-participial adjuncts, as the example in (78) illustrates.

(76) Having tutored himself at home, Paul received an A grade for A-level computer studies when he was 16. (BNC: K5M 4478)

(77) At noon, Second Officer Frazer returned to the weather deck to resume his watch, steering the ship into the storm. (OMC: GK1E.2.s249)

(78) Ursprünglich im Ostteil des Herzogtums Bayern
originally in.the eastern.part the.GEN duchy Bavaria
liegend, gehörte
lie.PRS.PTCP belonged
der Ort seit dem 12. Jahrhun- dert zum Herzogtum Österreich. (cf. (13))
the area since the 12th century to.the duchy Austria
'Originally located in the eastern part of the duchy Bavaria,
the area belonged to the duchy of Austria from the 12th century.'

This carries over to past-participial adjuncts in both languages. While Egerland (2002) claims that English adjuncts of this type have an "exclusively aspectual interpretation" and "can express no meaning other than the perfective, completed one" (Egerland 2002, 87, 82), the corpus data of the current study tell a different story. The past-participial adjuncts in the corpus do often have a perfective interpretation, as in (79)–(80), but they may also express an event that is simultaneous with the matrix event, as examples (81)–(82) illustrate:

[29] See Duffley (2000) for similar points made about English complement gerunds.

(79) In Alt St. Johann noch bei schönem Wetter
in Alt. St. Johann still in good weather
angekommen, stieg man auf die Sesselbahn um.
arrive.PST.PTCP changed one to the chairlift PTCL (=(72))
'Having arrived in Alt. St. Johann while the weather was still good, we changed to the chairlift.'

(80) [A] Rubens painting of a Dominican monk, stolen in the £30 million Beit Collection robbery in Ireland in 1986, has been found in a house in Borehamwood. (BNC: CKW 218)

(81) Von oben betrachtet aber schillern
from above observe.PST.PTCP however shimmer
sie blaugrün. (OMC: KOL1D.1.s58)
they blue.green
'(When) observed from above, however, they have a bluish green shimmer.'

(82) [W]hen faced by disaster she was in fact competent enough. (OMC: FW1E.1.s67)

Furthermore, the stativised passives described in the previous section (cf. examples (65)–(68)) denote states that hold at the time of the matrix event, even if the state itself derives from a completed event. Thus, past-participial adjuncts seem to have the same temporal and aspectual flexibility as present-participial ones, possibly with the exception of referring to events that follow the matrix event.

A further indication that participial adjuncts project a TP domain is that they can contain clausal negation, as noted in Sect. 4.1:

(83) When knitting with more than two colours and *not* having a colour changer I found that (…) the colour I was knitting always became entangled with the others not in use. (= (19))

(84) Throughout the park, ancient oaks (…) play host to large numbers of insects, including several rare species of beetles *not* known elsewhere in the country. (= (20))

(85) Godai lässt sich auf den Spaß ein,
Godai lets REFL on the joke in
nicht ahnend, welche Verwechslungen und Folgen
not know.PRS.PTCP which confusions and consequences
er damit heraufbeschwört (=(21))
he thereby evokes
'Godai gets in on the joke, not having any idea of the confusion and consequences he thereby evokes.'

(86) Obwohl im Programm *nicht* vorgesehen, kam
even.though in.the programme not foresee.PST.PTCP came
das neue Fahrzeug doch noch zu
the new vehicle however still to
einer richtigen Taufe (=(22))
a proper baptism

'Though not foreseen in the programme, the new vehicle had a proper baptism.'

If clausal negation is dependent on the presence of T, as argued by e.g. Laka (1990, 1994) and Zanuttini (1996, 1997), there must be a TP present in these adjuncts. The link between the possibility of clausal negation and the presence of TP in present-participial adjuncts has been drawn for these adjuncts in several languages, cf. Egerland (2002) for English and French, Thurén (2008) for Swedish, Ojea (2011) for English and Spanish and Helland and Pitz (2012, 2014) for French and German.[30]

A final and very important indication that a TP must be present in these adjuncts is that the present-participial suffix *-ing*/*-end* seems to originate in this domain. As the nature of this suffix is crucial for the analysis of these constructions, this point requires some discussion. As for the English suffix, one may be tempted to analyse it as the same suffix which is involved in progressive predicates, which according to Ramchand and Svenonius (2014) is located at the top of the argument-structural domain (or, in their terms, the event domain) of a clause. The two suffixes have the same form, and like the progressive, present-participial adjuncts typically express imperfectivity (but see the perfective examples in, e.g., (76) and (78)). As noted already by Quirk et al. (1985, 1004), however, "these *-ing* participle clauses cannot be regarded as strictly elliptical clauses, since the *-ing* participle does not necessarily represent a progressive form". There seems to be a consensus on this in the literature, as the *-ing* in gerunds (in argument or adjunct position) is typically analysed as either a (nominal) suffix in Infl/T (Reuland 1983; Baker 1985; Milsark 1988; Pires 2006, 2007), an element which is adjoined to different parts of the structure (Abney 1987; Kratzer 1996) or the head of a construction-specific small-clause projection (Lee 1987). Surprisingly, though, the literature provides very few, if any, reasons to exclude a progressive analysis. Before suggesting a new analysis which locates the suffix in the TP domain, I will give a few reasons why it cannot be

[30] Interestingly, Egerland (2002) argues that English past-participial adjuncts do not allow clausal negation. He provides the following example to illustrate this:

(i) *The castle, *not* destroyed by the enemy, remained intact throughout the war. (cf. Egerland 2002, 89)

However, the native speakers I have consulted judge this example (as well as other examples of past-participial adjuncts with negation) to be acceptable, even more so if it is made pragmatically more appropriate, as in (ii):

(ii) *Not* destroyed by the enemy (despite numerous attempts), the castle remained intact throughout the war.

This indicates that Egerland's (2002) claim that clausal negation may not occur in English past-participial adjuncts is too strong.

progressive *-ing* we are dealing with here.[31] First of all, adjunct *-ing* can combine with stative verbs, which the progressive suffix can never attach to (see also Embick 1997, 145):

(87) a. Knowing he took them seriously they expected much of him. (OMC: NG1E.2.s174)
b. *They are knowing he took them seriously.

Second, adjunct *-ing* can be combined with the perfective auxiliary *have*, as shown in (76) above. In the rigidly ordered auxiliary system of English, the perfective auxiliary originates in a structural position above the progressive auxiliary and suffix, as Ramchand and Svenonius (2014, 155) demonstrate with the examples in (88). For this reason, the perfective auxiliary can never host progressive morphology, as in (88b). Here, the progressive suffix *-ing* has attached to the perfective auxiliary *have*, resulting in ungrammaticality.

(88) {T, Mod} < Perf < Prog < Pass < V
a. He could have been being interviewed.
b. *John is having returned.

(Ramchand and Svenonius 2014, 155)

The fact that *-ing* can combine with auxiliary *have* in participial adjuncts suggests two things: First, that adjunct *-ing* does not (necessarily) have a progressive interpretation, as this would lead to a contradiction upon combination with a perfective auxiliary, and second that this suffix originates in a structural position above the perfective auxiliary and thus also above progressive morphology. If we are dealing with two different morphemes with two different structural positions here, this predicts that progressive and adjunct *-ing* should be able to co-occur. And this does indeed seem to be the case, seeing as the following constructed example is judged acceptable by native speakers of English:

[31] Another reason why it is important to state this explicitly is that not all adjuncts involving the present participle seem to behave in the same way in this respect. In fact, there is evidence that some participial adjuncts may involve progressive *-ing*. This is the case for so-called reduced relatives, as in (i):

(i) The man eating the green apple sat down.

The suffix in reduced relatives behaves like progressive *-ing* in that it cannot combine with stative verbs like *know* (cf. Embick 1997, 145), nor can it attach to the perfective auxiliary *have*:

(ii) *The woman knowing the answer will be here shortly.
(iii) *The man having eaten the apple sat down.

Furthermore, the restrictive interpretation of the reduced relative in (i) is not available for equivalent present-participial adjuncts in German, a language which also has no participial progressive construction:

(iv) *Der Mann den grünen Apfel essend setzte sich hin.
the man the green apple eat.PRS.PTCP sat REFL down
Intended reading: 'The man who was eating the green apple sat down'.

Reduced relatives will not be considered further here, but see Alexiadou (2013) for an analysis of such adjuncts in comparison with gerunds in argument position.

(89) Having just been being interviewed via Zoom for two hours, John was too tired to pick up the phone when Anna called.

A final reason for assuming that we are looking at a different suffix from progressive *-ing* in these adjuncts is of course the fact that German has no progressive construction involving the *-end* suffix. If the aim is to give a unified analysis of these constructions in the two languages (and possibly other languages which lack a homophonous progressive construction), it seems reasonable to assume that the present participle morphology is of a different nature here than in the English progressive construction.

For German participial adjuncts, an alternative analysis of the present-participial suffix is proposed by Helland and Pitz (2012, 2014). They suggest that the *-end* morpheme resides in a dynamic Aspect projection directly above *v*P, analogous to Embick's (2004) analysis of verbal passives.[32] What is problematic about this analysis, however, is that German *-end* can (marginally) attach to modal verbs, as was shown in Sect. 4.2 (cf. (34)). Similarly to the English perfective auxiliary, modals are associated with the TP domain and thus generated in a higher structural position than the low AspP suggested by Helland and Pitz.[33,34]

Having established that the *-ing*/*-end* suffix in these adjuncts cannot simply be the suffix involved in the progressive and also does not appear to belong in a (low) AspP, I will suggest instead that this suffix is an instantiation of non-finite T. This is reminiscent of the analyses of Reuland (1983), Baker (1985), Milsark (1988) and Pires (2006, 2007), who focus on *-ing* constructions in argument position. Differently from these proposals, however, I do not assume the suffix to be nominal, i.e. contain an element AGR that is dependent on the matrix verb for case (cf. Reuland 1983; Pires, 2006, 2007), for the simple reason that we are dealing with adjuncts here. In these adjuncts, *-ing*/*-end* instead appears to be a default realisation of a T that encodes semantic tense, as we saw above, but lacks finiteness (see also Egerland 2002). The examples in (76)–(78) above indicate that the T head in these adjuncts is both temporally underspecified and independent of matrix T. Technically, this can be implemented as an interpretable T feature with a default value that spells out as *-ing*/*-end*, where finiteness is not involved.[35] This supports the idea put forth for independent reasons by, e.g., Rouveret (1980), Zubizarreta (1980),[36] George and Kornfilt (1981), Platzack and Holmberg (1989), Rizzi (1997) and Bianchi (2003) that tense and finiteness must be considered two independent

[32] See Thurén (2008) for a similar analysis of present-participial adjuncts in Swedish.

[33] Possibly with the exception of so-called dynamic modals in German, which according to Wurmbrand (2003, 171, 183) have a lower structural position.

[34] As noted in fn. 21, however, it might be possible to analyse the present-participial suffix as a different kind of Asp head that can combine with different parts of the structure, rather than being confined to a single, low position as in Helland and Pitz's (2012, 2014) analysis.

[35] Space does not permit a discussion of possible similarities and differences between participial and infinitival T here, but see, e.g., Stowell (1982), Duffley (2000), Pires (2006) and Wurmbrand (2014a). (Note, however, that these authors focus on non-finite clauses in complement position.)

[36] The label Zubizarreta (1980) refers to the manuscript "Remarks on inflected infinitives in Portuguese", MIT.

parameters (see also Egerland 2002 and Pires 2006, 2007). Because of its lack of finiteness, T cannot assign case to the external argument in spec,VoiceP, which is realised as PRO. This means that the overt subject of absolutes must get its (accusative/nominative/dative) case feature valued by another element than participial T, as will be argued in Sect. 7.2.

As both present- and past-participial adjuncts can have an independent tense interpretation and host clausal negation, and T is the locus of the present-participial suffix, I conclude that both types of participial adjuncts seem to project a TP domain. I propose to analyse the TP domain of past-participial adjuncts as the silent version of the present-participial TP, where the T head and potential auxiliaries remain phonetically null. Evidence for this can be found in the fact that English past-participial adjuncts can easily be combined with a present-participial TP domain. The following example, where the present participle of passive *be* is added to an originally past-participial adjunct, shows this:[37]

(90) a. Disliked in the spirit world and branded amongst the Living, our unwillingness to stay affected all kinds of balances. (OMC: BO1E.1.1.s52)
b. Being disliked in the spirit world and branded amongst the Living, (…)

A question that remains unanswered, however, is why past-participial adjuncts in English and German cannot be headed by an unergative participle (cf. Egerland 2002, 91):[38]

(91) *Shown the way, others added their agreement. (cf. (31))
(92) *Ein Bierglass balanciert, (…) (cf. (1))
a beer.glass balance.PST.PTCP

One would expect this to be possible if the TP domain of past-participial adjuncts is simply the silent version of the TP domain found in present-participial adjuncts. It seems that the perfective participle of unergative predicates in these two languages is dependent on a phonetically realised T, alternatively that the T of past-participial adjuncts does not select for active Voice. The question of why this is the case will have to be left for future research.

6.3 The CP domain

Finally, there is evidence that not only an argument-structural domain and a TP domain, but also a CP domain, can be present in participial adjuncts. As noted in Sect. 5, the CP domain is responsible for encoding illocutionary force and relating the clause to its context, which for adjuncts involves the matrix clause. It seems that

[37] In German, this is not possible because the relevant auxiliaries cannot appear in the present-participial form, cf. Sect. 4.2. It is also not the case that every English past-participial adjunct can be transformed into a present-participial one and vice versa. The reason for this seems to be that past- and present-participial adjuncts cannot necessarily express the same adverbial interpretation in the same context; they often serve different pragmatic functions (cf. Sect. 4.2).

[38] This appears to be possible for past-participial adjuncts in languages like Italian, cf. Belletti (1990), Salvi and Vanelli (1992) and Egerland (2002, fn. 7).

both these properties can be observed in participial adjuncts. Turning to the second point first, we saw in Sect. 4.1 that free participial adjuncts in both English and German can be linked to the matrix clause via a complementiser:

(93) Ebenfalls nicht zu übersehen – *weil* im
also not to overlook because in.the
Dunkeln leuchtend – werden die
dark glow. - PRS.PTCP will the
Lichtinstallationen sein (=(23))
light.installations be
'The light installations will be equally hard to ignore because they glow in the dark.'

(94) *Obwohl* im Programm nicht vorgesehen, kam
even.though in.the programme not foresee.PST.PTCP came
das neue Fahrzeug doch noch zu
the new vehicle however still to
einer richtigen Taufe (=(24))
a proper baptism
'Though not foreseen in the programme, the new vehicle had a proper baptism.'

(95) *When* knitting with more than two colours and not having a colour changer I found that (…) the colour I was knitting always became entangled with the others not in use. (= (25))

(96) An Utz, he insinuated, even *if* tainted with alien blood, should at once assume the uniform of the Wehrmacht. (= (26))

While the possibility of complementisers in participial adjuncts is frequently mentioned in the literature, especially concerning present-participial adjuncts (see, e.g., Helbig 1983; Kortmann 1988; Zifonun et al. 1997, 2221; Helbig and Buscha 2001, 587; Duden 2016, 1038 for German and Reuland 1983; Quirk et al. 1985, 1004 ff.; Lee 1987; Kortmann 1991, 1995 for English), it has to my knowledge not been noted that in syntactic terms, this implies the presence of a CP domain.[39] On the contrary, Pires (2006, 26) and Ojea (2011, 167 f.) argue explicitly against the presence of a CP in English gerunds because they "do not contain complementizers" (Pires 2006, 26). Even though neither Pires nor Ojea explicitly restricts their analysis to complements here, the above examples indicate that this cannot be right for present-participial adjuncts in adjunct position. Rather, the examples above are a clear indication that a C position must be available both in these adjuncts and in past-participial adjuncts.[40] This, however, presupposes that we are in fact dealing with

[39] Helland and Pitz (2014) also assume a CP domain to be present in French and German present-participial adjuncts, but provide no empirical evidence to support any structure above TP.

[40] CP may of course be divided into a range of functional projections following Rizzi (1997), in which case the complementiser would not be located in C, but rather in Force or Fin. As it is not crucial for the analysis presented in this paper, I will not go into detail on the structure of the CP domain here.

complementisers here, and not prepositions, as argued by Emonds (1976, 1985) and Johnson (1988). For temporal subordinators like *after, before* and *until*, a prepositional analysis may seem compelling, as these lexical items can introduce both noun phrases and clauses. This is not the case for the other subordinators present in the corpus, however. As described in Sect. 4.1, these include causal *weil, da* 'because', concessive *obwohl, wenn auch* 'even though', conditional *wenn, falls*, 'if' and comparative *wie* 'as' in German and temporal *when, while*, conditional *if* and *whether,* concessive *though, although* and comparative *as, as if, as though* in English. As neither of these lexical items can occur in prepositional environments or case-mark a noun, an analysis of them as prepositions seems uncalled for. Instead, I assume that words like *after, before* and *until* are underspecified vocabulary items that may lexicalise either P or C, and that in the case of participial adjuncts, we are dealing with realisations of C.[41]

Speaker-oriented adjuncts constitute another CP-related phenomenon that occurs in participial adjuncts, as noted in Sect. 4.1:

(97) Die Politik der Deutschen *sozusagen* vorwegnehmend,
the politics of.the Germans so.to.speak anticipate.PRS.PTCP
führten die Milizionäre
carried the militia.men
(…) bereits umfangreiche Verhaftungen durch. (=(17))
already extensive arrests out
'The militia was already carrying out extensive arrests, so to speak anticipating the politics of the Germans.'

(98) The youths had been holding a vigil for student Quaddus Ali, who remains critical but stable after *reportedly* being attacked by a gang of white youths in Stepney, east London, on Wednesday. (BNC: K35 291)

(99) Die Männer träumen von einem neuen Son- ntagsanzug,
the men dream of a new Sunday.suit
mitdem [sic] sie sich, *ihrer*
with.which they REFL their
Meinung nach anständig gekleidet, in
opinion after well dress.PST.PTCP in
der Kirche oder auf dem Marktplatz sehen
the church or at the marketplace see
lassen können. (OMC: ERH1D.3.s76, see also Brodahl 2020: 262)
let can
'The men dream of a new Sunday suit, in which, well-dressed, in their opinion, they can appear at church or the marketplace.'

According to Haegeman (2012), adjuncts expressing speech-act modality as in (97), evidential modality as in (98) and epistemic modality as in (99) "are all associated with the speaker's point of view and can be said to modify the force

[41] For more arguments for why temporal subordinators like *after, before* and *until* should not be analysed as prepositions when they introduce English gerunds, see Dubinsky and Williams (1995).

of the assertion" (Haegeman 2012, 225). The fact that such adjuncts may occur in participial adjuncts indicates that illocutionary force, another property associated with the CP domain, must be encoded syntactically in these adjuncts. Thus I conclude that free participial adjuncts project a CP domain.[42,43]

Note, however, that absolute participial adjuncts behave differently from free participial adjuncts with regard to both complementisers and speaker-oriented adjuncts. In fact, it seems that neither is allowed in absolutes. These adjuncts cannot be introduced by complementisers, as (100) demonstrates, where a complementiser that frequently introduces free adjuncts (see, e.g., (95)) and is compatible with the interpretation of the absolute yields an ungrammatical result (see also Reuland 1983; Lee 1987).[44] Speaker-oriented adjuncts of different types also appear to be generally excluded, as illustrated in (101):

(100) And she, too, had something of the precision and contrived charm of a doll (…), and, (*when) the image changing, he had seen her as a bright exotic flower. (cf. OMC: PDJ3E.1.6.s43)

[42] As we are dealing with non-finite adjuncts here, the CP domain of participial adjuncts is of course restricted compared to the CP domain of root clauses. This means that CP-related phenomena like movement to various specifier positions in the CP domain are expected to be excluded or severely restricted in these adjuncts (see, e.g., Emonds 1976, 2004 on "root transformations" and Haegeman 2012 on "main clause phenomena").

[43] Note, however, that according to native-speaker judgments, participial adjuncts can contain (non-fronted) *wh*-phrases and be used to form questions, as in (i)-(ii):

(i) Welchen Riesen bezwingend verlorst du dein linkes Ohr?
which giant defeat.PRS.PTCP lost you your left ear
(ii) (While) defeating which giant did you lose your left ear?

As an anonymous reviewer notes, this is surprising given that (clausal) adjuncts are expected to be islands, in which case a *wh*-feature/operator inside the adjunct should not be able to take interrogative scope over the main clause. Interestingly, something similar is observed in German pied-piped infinitival relatives like (iii), where the relative pronoun does not move out of the fronted infinitival clause, but still functions as a relative operator:

(iii) Jetzt hat er sich endlich den Wagen, [den zu kaufen]$_i$ er sich schon
now has he REFL finally the car REL to buy he REFL already
lange t_i vorgenom men hatte, leisten können. (cf. van Riemsdijk 1982, 83)
long.ago decided had afford could
'Now he could finally afford the car he had decided to buy long ago.'

Van Riemsdijk (1982) argues that in these relatives, the relative operator percolates from the infinitival clause to the matrix clause, an analysis which could potentially be extended to participial adjuncts containing *wh*-phrases as well. Space does not permit further discussion of this matter here, but the issue of which types of (movement) operations may or may not take place both within and out of participial adjuncts is an interesting one for future research. See also Truswell (2011) for a discussion of the island status of (some) non-finite adjuncts in English.

[44] The absolute in (100) has an independent subject, cf. the different types of absolutes described in Sects. 4.3 and 7.2. The compatibility of pertinence and distributive absolutes with complementisers is difficult to test, as there do not seem to be any complementisers in English or German that can express these semantic relations (cf. the pertinence example in (101) and the examples provided in Sect. 4.3).

(101) Bald standen die Besucher in dem Gotteshaus,
soon stood the visitors in the church
den Kopf (*ehrlich gesagt/ *leider/ *vermutlich)
the.ACC head honestly said unfortunately presumably
in den Nacken gelegt (cf. (35))
in the neck put.PST.PTCP
'Soon the visitors stood in the church, their heads frankly/unfortunately/presumably bent backwards'

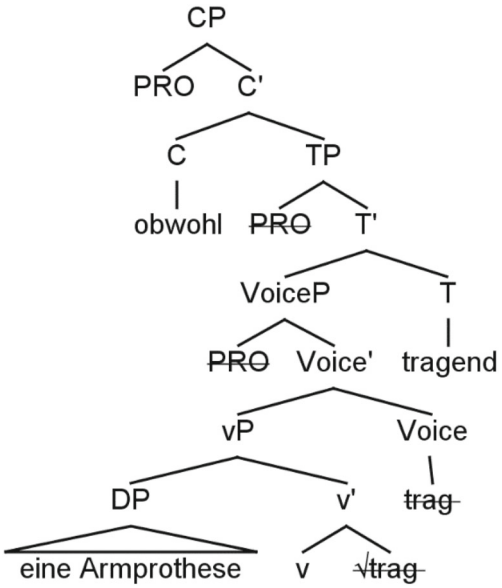
Thus, there is no evidence that absolute participial adjuncts project a CP domain, and moving forward I will assume that they are TPs.

6.4 Overview: three domains of participial adjuncts

In summary, the analysis of participial adjuncts presented in this section indicates that they have a complex and clause-like internal structure. For both free and absolute participial adjuncts, the derivation starts with a root being categorised as a verb, which may then occur in several different argument-structural configurations. While the past-participial morphology attaches to different parts of the argument-structural domain, the present-participial suffix belongs in the TP domain. Finally, free participial adjuncts also project a CP domain. In Sect. 7.1, it will be argued that the PRO subject of these adjuncts moves to spec,CP in order to take part in a control relation with its matrix antecedent via Agree. Thus, free participial adjuncts have a clause-like internal structure as in (103) and (105), which are structural representations of the German transitive present-participial adjunct in (102) and the English eventive passive past-participial adjunct in (104), respectively:

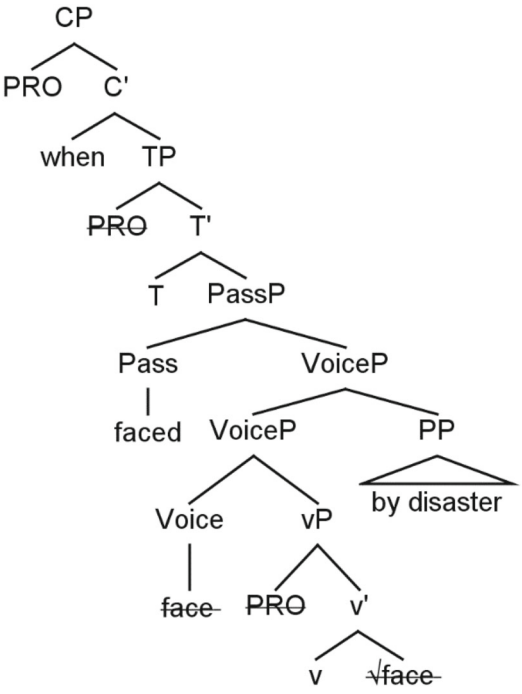
(102) Der Lebens- gefährte weiß, obwohl eine Arm- prothese
the partner knows even.though an arm.prosthesis
tragend, eine Weinflasche problemlos zu
wear.PRS.PTCP a wine.bottle problem.free to
öffnen. (DeReKo: M13/DEZ.02508)
open
'Despite wearing an arm prosthesis, the partner knows how to open a wine bottle without any problems.'

(103)



(104) [W]hen faced by disaster she was in fact competent enough. (= (82))

(105)



As for absolute participial adjuncts, these are largely built in the same way as the free adjuncts above, with the exception of a CP domain and the addition of an overt subject that must be case licensed in some way. I return to the internal structure of absolutes in Sect. 7.2.

Note, however, that German and English participial adjuncts differ with respect to the attachment of present-participial morphology. For German present-participial adjuncts, I assume that the verbal root moves to T, where it combines with the *-end* suffix.[45] In English, on the other hand, the verbal root stays in situ and gets associated with the participial suffix at PF. These assumptions are based on the fact that the word order in present-participial adjuncts generally reflects the word order in finite sentences in the two languages, with adverbs and negation preceding the participle in English adjuncts (cf. (106)–(107)) and the participle in final position in German, as in, e.g., (102) above.[46]

(106) *[N]ot* wanting to offer a "blueprint" for individual nations, the commissioners defined sustainable development in only the most general, global terms. (OMC: LTLT1E.1.3.s1)

(107) Edgar Allan Poe 's The Descent into the Maelstrom grips the throat by being not so much about a giant whirlpool but human fear, *again* breaking the editor's rule. (BNC: AHA 1185)

Interestingly, English present-participial adjuncts with an auxiliary do not seem to behave differently from those without an auxiliary in this respect. As the following example shows, negation precedes the participial auxiliary as well:

(108) *Not* having entered art competitions before, I'm delighted to have reached the finals. (BNC: C88 565)

This indicates that the auxiliary does not move to T in adjuncts with an auxiliary as the participial head either, contrary to the behaviour of finite auxiliaries in English main clauses.

7 The subject of participial adjuncts

In the account given so far, a key element of participial adjuncts has been missing: the subject. As we have seen, the subject of these small clauses is either PRO or a case-marked DP, and an analysis of participial adjuncts must therefore be able to account for both possibilities. A central point of the analysis to be argued for here is that free and absolute adjuncts should not be considered two fundamentally different constructions with, e.g., two different types of T or two homophonous participial suffixes (see Sect. 7.2). Rather, the two types of participial adjuncts involve the

[45] I will not go into alternative analyses of head movement here, but see e.g. Matushansky (2006), Roberts (2010).

[46] However, German participial adjuncts allow constituents of the so-called middle field to be extraposed, cf. (85).

same basic syntactic structures described in the previous sections. Where they differ is in their connection to the matrix clause—are they 'bare' adjuncts that adjoin directly to a matrix projection, or is there another layer between the participial structure itself and the matrix clause? In Sect. 7.2, I will argue that the latter is indeed the case for the majority of the absolute adjuncts, and that the overt subject of these constructions is case licensed via the head of this extra layer, while default case is the relevant mechanism in one subgroup of absolutes. But first, I will sketch a control analysis for free participial adjuncts in Sect. 7.1.

7.1 Control in free adjuncts

The assumption that seemingly subjectless participial adjuncts do in fact contain a PRO subject is in line with standard generative theory following Chomsky (1981).[47] Empirical evidence for this comes from the presence of anaphors in the adjuncts, which must be bound by a local subject (see also Thurén 2008; Brodahl 2016, 2018, 2020; Høyem and Brodahl 2019):

(109) Unsicher wippt er_i, PRO_i [*sich selbst*]$_i$ in die Arme
insecure rocks he REFL in the arms
nehmend, (…) vor und zurück.
take.PRS.PTCP forth and back
(cf. DeReKo: U13/NOV.06044)
'He is rocking back and forth insecurely, hugging himself.'

(110) Rain they$_i$ take as a personal affront, PRO_i shaking their heads and commiserating with [*each other*]$_i$ in the cafes (…) (cf. OMC: PM1E.1.s123)

As explored in detail by Kortmann (1991) for English and Starke (1996, 1999), Brodahl (2016, 2018) and Høyem and Brodahl (2019) for German, the PRO subject of participial adjuncts can be controlled by a range of different antecedents inside or outside the matrix clause, but the by far most common control relation is subject control. In the corpus of the current study, 86.3% of the English free adjuncts display subject control, while the same is the case for 70.2% of the German free adjuncts.[48] In the following control analysis, I will focus on subject control as an instance of obligatory (syntactic) control, but I refer to the works mentioned above for empirical and theoretical insight into other control relations.

To a large extent, the control analysis below builds on Fischer (2018) and Høyem (2018a) (see also Fischer and Høyem 2022). Fischer and Høyem assume that the

[47] More specifically, PRO is necessary here because of the theta criterion. Within a DM framework, however, it cannot be assumed that theta roles are assigned by lexical elements, as roots do not contain this information (see, e.g., Harley and Noyer 1999). Instead, argument-structural requirements are determined by the structural templates involved, and "thematic roles are reduced to structural configurations" (Harley and Noyer 1999, 7).

[48] The relatively low percentage of subject control among the German participial adjuncts has to do with the frequent quasi-formulaic past-participial constructions mentioned in Sect. 4.2 (cf. example (28)), which generally do not have subject control. While 83.4% of German present-participial adjuncts display subject control, this is the case for only 57.7% of past-participial adjuncts. For a detailed discussion of control in German past-participial adjuncts, see Høyem and Brodahl (2019).

syntactic mechanism involved in obligatory control in adjuncts is Agree, thereby extending Landau's (2000) Agree-based analysis of control in non-finite complement clauses (see also, e.g., Flaate 2007; Thurén 2008).[49] Differently from Landau (2000), however, Fischer and Høyem argue that valuation proceeds in a downward fashion as in Wurmbrand's (2011[50] et seq.) Reverse Agree (see also, e.g., Adger 2003; Haegeman and Lohndal 2010; Zeijlstra 2012 for similar proposals):[51]

(111) A feature F: __ on α is valued by a feature F: val on β, iff
i. β c-commands α AND
ii. α is accessible to β [*accessible:* not spelled-out]
iii. α does not value {a feature of β}/{a feature F of β}
(Wurmbrand 2014b: 132)

In the Agree relation that is control, then, the lower element—the PRO subject of the adjunct—has unvalued features that must be checked by an antecedent in the matrix clause with matching, but valued, features (cf. Fischer 2018).[52] Like Wurmbrand (2011) and Høyem (2018a), I assume that the features in need of valuation are PRO's interpretable, but unvalued phi features. However, as Fischer (2018) discusses extensively, the Phase Impenetrability Condition (Chomsky 2000 et seq.) prevents this Agree relation from taking place when PRO is in its base position within the adjunct because the adjunct, being a CP, constitutes a phase. In order to be available for Agree with an element outside the adjunct, Fischer (2018) proposes that PRO must first move to the phase edge of the adjunct, i.e. spec,CP.

Based on this, we can assume that obligatory subject control of PRO in participial adjuncts proceeds as in (112). In an active participial adjunct, PRO is generated in spec,VoiceP with interpretable, but unvalued phi features. As the derivation of the adjunct continues, the yet unvalued phi features of PRO force it to move (via spec,

[49] For analyses of control in participial small clauses as movement following Hornstein (1999 et seq.), see Pires (2006, 2007) and Helland and Pitz (2012, 2014).

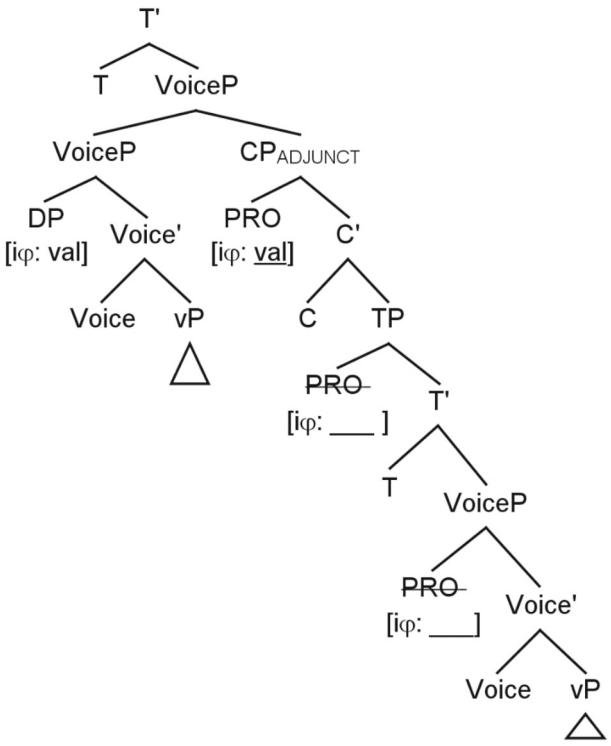
[50] The label Wurmbrand (2011) refers to lecture notes entitled "On Agree and Merge", presented at the University of Connecticut in the spring of 2011.

[51] Wurmbrand's 'Reverse Agree' is not to be confused with the original concept of a reverse Agree relation that is seen as the by-product of a standard (downward) Agree relation following Chomsky (2000, 2001) and Pesetsky and Torrego (2004). See Zeijlstra (2012) for a criticism of this concept.

[52] This yields a direct control relation between the PRO subject and the antecedent DP, as proposed by Fischer (2018) (see also Wurmbrand 2011). Høyem (2018a), on the other hand, argues that the control relation is indirect, in that PRO is not valued by the antecedent DP itself, but through a multiple Agree relation between the matrix antecedent, its closest c-commanding functional head and adjunct PRO (see also Landau 2000; Flaate 2007; Thurén 2008 for similar proposals). Assuming that a matrix functional head is involved here makes it possible to account for object control in adjuncts, something which is not possible in Fischer's direct control analysis if the adjunct appears outside the c-command domain of the matrix object. However, in the analysis presented here, where the object is generated in spec,vP rather than the complement position of a V, the participial adjunct will in fact be in the c-command domain of the matrix object when the participle adjoins to vP (see fn. 54), as would be parallel to Høyem's assumption that object-controlled adjuncts adjoin to VP. Thus, a direct control relation can be maintained.

TP) to spec,CP, from where it cannot move any further, as the adjunct is an island (cf. Fischer 2018). Assuming that the participial adjunct is adjoined to matrix VoiceP,[53] it will be in the c-command domain of the matrix subject in spec, VoiceP.[54] The matrix subject can thus value the phi features of PRO.

(112)



7.2 The subject of absolutes

Recall from Sect. 4.3 that three different types of participial absolutes can be distinguished based on the interpretation of their subject. Pertinence absolutes have a subject that denotes a body part or possession of a matrix antecedent, as in (113),

[53] This would be parallel to the vP adjunction assumed for subject-controlled adjuncts in Fischer (2018) and Høyem (2018a), who assume that the subject is merged in spec, vP.

[54] Given the definition of c-command in (i), which is a paraphrased version of the definition proposed by Aoun and Sportiche (1983):

(i) X c-commands Y iff every maximal projection dominating X also dominates Y.

According to this definition, X (in (112) the matrix subject DP) c-commands Y (adjunct PRO) even though there is a segment of the maximal projection VoiceP that dominates X but not Y (Terje Lohndal, p.c.). As an anonymous reviewer notes, it is questionable whether other definitions of c-command such as the one given in Chomsky (1995, 11) would allow for c-command into adjuncts in this way.

while so-called distributive absolutes refer to a subset of a plural matrix antecedent, as in (114). Finally, in English there is a third type of absolutes where the subject is entirely independent of any referent in the matrix clause, cf. (115):

(113) Bald standen sie$_i$ in dem Gotte- shaus, [den Kopf]$_i$ in den
soon stood they in the church, the.ACC head in the
Nacken gelegt (= (35))
neck put.PST.PTCP
'Soon the visitors stood in the church, their heads leaning backwards'

(114) [He and I]$_{i+j}$ rambled off, I$_j$ poking with a stick at every mound and hole for what treasures I did not know (…) (= (38))

(115) It was hot outside, the mid-afternoon sun burning palely through a thin screen of clouds. (= (39))

The two types of absolutes found in German are also distinguished by case: While pertinence absolutes occur with a subject in the accusative, or in the dative when introduced by *mit* 'with', distributive absolutes have a nominative subject. In English, the accusative is the dominant case for all three classes (see Sect. 4.3).

What these three types of absolutes have in common is that they differ from free participial adjuncts in two significant ways. First, we saw in Sect. 6.3 that while free adjuncts can contain elements associated with the CP domain, absolute adjuncts do not seem to project beyond TP. Second, the subject is overt rather than phonetically null, meaning that the subject DP must be case licensed in some way. How exactly this happens is a question that has proved notoriously difficult to answer. The fact that these adjuncts have an overt subject indicates that they fall outside the distinction traditionally made between small clauses in complement and adjunct position since Stowell (1981, 1983): While small clauses in complement position are expected to allow for an overt DP subject because the head of the superordinate projection will (in certain structural configurations) be able to case-mark it, adjunct small clauses—being ungoverned in Stowell's GB terminology—are expected to have a PRO subject. Yet absolute participial adjuncts appear to be adjuncts with an overt subject.

To explain this, different suggestions have been made in the literature, which can be divided into three broad categories. First, the subject may be licensed clause-internally, by participial T/Asp (Ojea 2011; Helland and Pitz 2014) or Infl (Reuland 1983), which can somehow case license its subject despite being non-finite. Second, it may be assumed that the subject is case licensed by an element outside the participial adjunct, as suggested by Lee (1987) and Høyem (2019), who propose that (certain) absolutes are introduced by a (phonetically null or overt) preposition or predicational operator. Such an analysis implies that the participle construction is in fact not merged in adjunct position, but rather in the complement position of a case-assigning element, where an overt subject is to be expected. Third, it has been argued that case licensing in absolutes happens as the result of a default mechanism which applies when case cannot be licensed otherwise, as proposed by Czepluch (1996), Høyem (2018b) and Brodahl (2020) for nominative absolutes in German and Schütze (1997) for English absolutes.

The first alternative—assuming that the subject is case licensed clause-internally—is problematic because this would imply that the T/Asp/Infl head of absolutes has a fundamentally different feature specification than the corresponding head in free adjuncts. This seems undesirable, as both free and absolute adjuncts involve the same building blocks otherwise: a non-finite participle combined with arguments and adjuncts. It also seems controversial to assume that a (low) Asp projection can have nominative case features, as Helland and Pitz (2014) propose for past-participial absolutes, which according to them only project to AspP directly above *v*P (see Sect. 6.2). Furthermore, it remains unclear what exactly the feature specification of T/Asp/Infl would look like in free and absolute participial adjuncts, respectively. While Helland and Pitz (2014) simply assume that T/Asp either has or lacks "nominative features", Ojea (2011) argues that absolute T contains a special feature [+absolute] that licenses a nominative DP. Reuland (1983), finally, suggests that absolute Infl contains an "abstract [agreement] marker" that can somehow get and assign nominative case. For Reuland, this means that the *-ing* suffix occupying T/Infl is fundamentally different in free and absolute adjuncts, with free adjunct *-ing* being "participial" and absolute *-ing* "nominal" (cf. Reuland 1983, 114 ff.).

Instead, I will argue that the two other proposed explanations, whereby case is licensed either via an external element or as the result of a default mechanism, are the relevant ones for participial absolutes. As the next sections will show, all absolutes cannot be treated alike here. While there is evidence of an external case licensor in pertinence absolutes and English absolutes with a distributive or independent subject, it seems to be necessary to appeal to a default mechanism to explain German distributive absolutes.

7.2.1 Pertinence absolutes

Høyem (2019) proposes an analysis that can explain the case-licensing in pertinence absolutes. Based on binding data from German absolutes, she argues that there is a second layer of predication present in these adjuncts. As noted by Fabricius-Hansen et al. (2012, 84) and Høyem (2018b, 128) as well, anaphors in German pertinence absolutes are interestingly not bound by the local accusative or dative subject. Instead, they are co-referent with the matrix argument the absolute subject stands in a relation of pertinence with, usually the matrix subject. Brodahl (2020) shows in more detail that this is also the case for absolutes with a participial predicate; cf. the following example adapted from Brodahl (2020, 264):

(116) Er$_i$ hängt tief in einem Campingstuhl, [die Beine]$_j$ von
he hangs deeply in a camping.chair the legs.ACC from
*sich$_{i/*j}$/*ihm* gestreckt.
REFL him stretch.PST.PTCP
'He is lying in a camping chair, his legs stretched away from him.'

Høyem (2019) and Brodahl (2020) see this as evidence that these constructions contain a PRO subject controlled by the matrix antecedent in addition to the overt subject of the absolute, which binds the reflexive within the absolute. Høyem (2019)

suggests that this PRO is the subject of a PrP (Predication Phrase, cf. Bowers 1993, 2001) where the Pr head is a predicational operator taking the absolute participial construction as its complement.[55] This head can be lexicalised by *mit* 'with', or it may remain silent. In any case, Høyem argues that this predicational head has the selectional features associated with main verb *haben* 'have', which arguably also selects for a small-clause complement (see also Businger 2011).[56] This makes the Pr head "the non-verbal equivalent of main verb *haben*" (Høyem 2019, 474, my translation). Applying this analysis to participial pertinence absolutes yields the following structure, based on Høyem (2019, 485) and Brodahl (2020, 264):

(117) $[_{PrP}$ PRO *mit*/Ø $[_{TP}$ $DP_{DAT/ACC}$ (…) PTCP (…)]]

Here, the participial TP is in the complement position of the Pr head, which can then value the case features of the subject of the absolute as either dative or accusative (depending on whether or not the Pr head is lexicalised by *mit*), thus explaining the presence of an overt subject in these constructions.

[55] A question that comes to mind here is how the anaphor in the absolute can be bound not by the nearest subject (i.e., the overt subject of the absolute), but rather by the PRO subject of a superordinate PrP. This question is not addressed by Høyem (2019), but it seems to me that this has to do with the nature of the reflexive anaphor *sich*. As shown by, e.g., Manzini and Wexler (1987) and Fischer (2003, 2005), the binding domain for anaphors across languages does not always correspond to the "governing category" assumed in Chomsky's (1981) binding principle A, which would be equivalent to the closest TP in a current framework (cf. Fischer 2003, 51). While this seems to be the relevant binding domain for complex reflexives like *herself* in English and *sich selbst* in German, the German reflexive *sich* to some degree allows (or even requires, as in these absolutes) less local binding, as the following examples show (the same is the case for the Norwegian reflexive *seg*, cf. Busterud 2014):

(i) Sarah glaubt, dass Max_i $Peter_j$ [PRO_j für $sich_i$ arbeiten] lässt. (cf. Fischer 2005, 190)
Sarah believes that Max Peter for REFL work lets
'Sarah believes that Max makes Peter work for him.'

This indicates that *sich* can be bound across a non-finite clause boundary, something which could explain the binding behaviour of absolute adjuncts. In fact, if this is the case, it should be possible for the matrix subject to bind the reflexive of the absolute directly. However, the fact that the antecedent does not have to be the matrix subject, but can also be a matrix object, implies that a PRO subject must be present (Andrew Weir, p.c.):

(ii) Dann sah er ihn_i (…), PRO_i den Kopf gegen den Reisesack neben $sich_i$ gelehnt (…)
then saw he him the.ACC head against the travel.bag next.to REFL lean.PST.PTCP
(cf. Patrick Süskind, 1985: *Das Parfum,* p. 271. Zürich: Diogenes)
'Then he saw him_i, his_i backpack leaning against the travel bag next to him_i.'

[56] Helland and Pitz (2014, 248) also propose an analysis of German accusative absolutes involving main verb *haben*. In their analysis, however, *haben* is represented as a second verbal head inside the participial *v*P, and there is no mention of layered predication as in Høyem (2019). As the assumption that a single *v*P can host both main verb *haben* and a participle seems controversial, I will not consider their analysis further here.

While the empirical evidence based on binding data reported above cannot be given for English, which lacks anaphors of the relevant type,[57] it seems sensible to extend this analysis to English pertinence absolutes as well. Semantically, these absolutes express the same relation of pertinence between the absolute subject and a matrix antecedent. And analogously to German absolutes introduced by *mit*, these English absolutes may be introduced by a *with* that seems comparable to main verb *have* both in its interpretation and its selectional features (cf. Sect. 4.4, see also McCawley 1983). Furthermore, syntactic evidence for layered predication in these absolutes can be found in secondary predicates within the absolutes. These refer to the matrix antecedent rather than the overt subject of the absolute, indicating that the matrix antecedent is syntactically active in the absolute adjunct as well, presumably via PRO (see also Bech 1983, 58; Høyem 2018b, 131; Brodahl 2020, 264):

(118) Angela$_i$ just sat there, PRO$_i$ [her fists]$_j$ clenched *[like PRO$_{i/*j}$ a toddler]*.
(119) "You've changed your mind, at any rate," said Bert$_i$, PRO$_i$ [his head]$_j$ occasionally moving from side to side *[as if PRO$_{i/*j}$ in disbelief]*, his eyes staring. (= (37))

7.2.2 Absolutes with a distributive or independent subject

While it is tempting to propose a single analysis for all participial absolutes, it does not seem possible to extend the analysis proposed by Høyem (2019) and Brodahl (2020) for pertinence absolutes to absolutes with a distributive or independent subject. For one thing, these constructions lack the pertinence interpretation associated with the adjuncts described above. Furthermore, there is no evidence of layered predication within the adjunct here. On the contrary, binding data from German show that reflexives in absolutes with a distributive (and nominative) subject are bound by the overt subject of the absolute, rather than a matrix antecedent as in pertinence absolutes (cf. Høyem 2018b; Brodahl 2020). Furthermore, these absolutes may contain a pronoun which is co-referent with the matrix subject, in contrast to the pertinence absolute in (116) above. These binding facts

[57] While English lacks reflexives, reciprocal anaphors are of course available. However, it seems that differently from the German reflexive anaphor *sich* (see fn. 55), reciprocal anaphors in both English and German must be bound strictly locally. Compare example (i) taken from Kortmann (1988, 61), where the German reflexive *sich* has a reciprocal interpretation and is synonymous with *einander* 'each other', and the English translation in (ii):

(i) [Die beiden Verliebten]$_i$ saßen am Caféhaustisch, [ihre Hände]$_i$
the two lovebirds sat at.the café.table their hands
sich$_{i/*i}$ sanft berührend.
REFL softly touch.PRS.PTCP
(ii) [The lovebirds]$_i$ sat at the café table, [their hands]$_i$ touching [each other]$_{i/*i}$ softly.

are demonstrated in the following example, where the anaphor *sich* must be bound by the local subject *sie* and a pronoun in the adjunct (*ihm*) can be co-indexed with (a conjunct of) the matrix subject:

(120) [Lady Di]$_i$ und [Prinz Charles]$_j$ sind auf dem
Lady Di and Prince Charles are on the
Rücksitz einer Limousine fotografiert,
backseat a.GEN limousine photographed
sie$_i$ sich$_{i,*j}$/ihm$_i$ die Tränen trocknend.
she.NOM REFL him the tears dry.PRS.PTCP
(cf. Brodahl 2020, ex. (5), (72))
'Lady Di and Prince Charles are photographed in the back of a limousine, (with) her wiping her/his tears.'

Thus, there is little evidence of case licensing via a predicational operator in these absolutes. A possible alternative analysis is that we are dealing with default case here, i.e. a spell-out rule that applies when a noun phrase cannot be case marked otherwise (cf. Schütze 1997, 2001). As shown in Sect. 4.3, German distributive absolutes consistently occur with a nominative-marked subject, which is the default case in German, while the accusative is preferred in English, where this is the default case today.[58] An explanation along these lines is suggested by Schütze (1997) for English absolutes and Czepluch (1996), Høyem (2018b) and Brodahl (2020) for nominative absolutes in German. Of course, one may ask why such a default mechanism would occur when participial adjuncts may simply appear with a PRO subject, like the free adjuncts discussed in Sect. 7.1. However, as Brodahl (2020, 274 f.) argues for distributive absolutes, it would not be possible to leave the subject phonetically null in these adjuncts, because the intended distributive interpretation cannot be accessed via (obligatory or non-obligatory) control, something which is also noted by Landau (2000, 53): "[A] semantically plural controller cannot control a semantically singular PRO, even if the latter's reference is included in the former's". The same would be the case for absolutes with an independent subject (cf. (115)), which is usually not even present in the matrix clause and therefore cannot be interpreted as a controller. Based on this, the case-marking of non-pertinence absolutes could be seen as a last-resort mechanism occurring when structural case is not available and an overt subject is necessary to achieve the correct interpretation.

However, for English absolutes with a distributive or independent subject, an alternative analysis is available which does not involve resolving to the last-resort mechanism of default case. Instead, I will propose that these absolutes are dominated by a prepositional layer, which may either be overtly realised by *with* or be left silent.[59] As was shown in Sect. 4.4, all English absolutes may be introduced

[58] As mentioned in Sect. 4.3, I assume that when the subject of English absolutes occurs in the nominative, this is a result of hypercorrection (see Schütze 1997).

[59] Note that differently to the subordinators occurring in free adjuncts (cf. Sects. 4.1 and 6.3), *with* and *mit* (as well as other prepositions introducing absolutes, see fn. 16) cannot be analysed as complementisers, as they never introduce finite adverbial clauses.

by *with*, including those that do not express a pertinence relation between the absolute subject and a matrix antecedent (see also McCawley 1983). Compare the following examples first given in 4.3:

(121) Since yesterday, public transport has been shut down, with residents told not to leave the city. (= (40))
(122) He and I rambled off, with me poking with a stick at every mound and hole for what treasures I did not know (…) (cf. (38), (50), (114))

With may also be inserted in absolutes with a distributive or independent subject that do not contain the preposition to begin with, as (122) is an example of (see Sect. 4.4). This makes it plausible to assume that a prepositional layer is always present in these absolutes, as first proposed by Lee (1987). Lee (1987, 643) argues that *with* may be left unpronounced here because its meaning is "readily inferable from the context". If it is the case that these absolutes are always introduced by a prepositional layer, this provides an explanation for the case licensing of the overt subject. On this analysis, the participial absolute is not adjoined to the matrix clause directly, but rather located in the complement position of a case-assigning preposition as in the following structural representation:

(123) $[_{PP}$ *with*/Ø $[_{TP}$ DP_{ACC} PTCP (…)]]

Note that this analysis cannot be extended to German absolutes with a distributive subject, as the subject of these absolutes is always in the nominative case and the absolutes become unacceptable if the preposition *mit* is inserted (cf. (52)). This implies that the English lexical item *with* is more underspecified than its German counterpart *mit* with regard to its insertion context.[60] While both *mit* and *with* may head a PrP or a prepositional phrase with a non-clausal complement, only English *with* may lexicalise a prepositional head that takes a (participial) TP complement.[61] Hence, for the licensing of the nominative subject of German distributive absolutes, default case seems to be the only available explanation. The internal structure of German distributive absolutes can thus be represented as in (124):

(124) $[_{TP}$ DP_{NOM} (…) PTCP]

To sum up, the discussion in the preceding sections has argued that the case licensing of the subject of most absolute participial adjuncts in English and German happens via an external element that takes the participial TP as its complement. While pertinence absolutes involve a second layer of predication, there is no evidence of this in English absolutes with a distributive or independent subject, which are instead introduced by a prepositional layer. For distributive absolutes in

[60] Thanks go to an anonymous reviewer for pointing this out.

[61] Presumably, other possible augmentors for English absolutes, such as *without* and *despite* (see fn. 16), are underspecified in a similar vein. As only the predication particle *mit* and no prepositions may introduce German absolutes, the difference in possible insertion contexts appears to be a more general cross-linguistic difference between English and German prepositions.

German, however, it is necessary to appeal to a default mechanism that applies when neither structural case licensing nor control is available.

8 Concluding remarks

This paper has presented an empirically based and comparative theoretical account of the internal structure of participial adjuncts in German and English. A central aim has been to show that these adjuncts are characterised by the same basic properties in both languages, with the most significant being their clause-like internal structure. Evidence for a TP domain in all participial adjuncts and additionally a CP domain in free participial adjuncts of both languages indicates that the constructions that first gave rise to the term "small clause" (cf. Williams 1975) are in fact not small. Rather, they seem to be as structurally complex as non-finite clauses can get, with only a non-finite predicate and in some cases a null subject separating them from finite clauses. But as was shown above, the structural possibilities of these adjuncts vary depending on the participial head and the realisation of their subject, and this variation manifests itself differently in the two languages. While the argument-structural domain of present-participial adjuncts is more flexible than that of past-participial adjuncts in English, it is the other way around in German. Regarding the subject of these adjuncts, it was argued that free adjuncts contain a PRO subject which is typically obligatorily controlled by the matrix subject through Reverse Agree. Absolute adjuncts, on the other hand, can be divided into several different types depending on the semantic relation between their subject and the matrix clause. German absolutes are more restricted than English ones in this respect, but also show an interesting correlation between semantic type and case which is lacking in English. It was argued above that the absolute subject is case licensed either via an element outside the absolute or as an instance of default case. This analysis shows that the internal structure of all participial adjuncts, both free and absolute and in both German and English, can be accounted for using the same syntactic building blocks.

While the account above provides important insights into the complex structure of participial small clauses cross-linguistically, other aspects of these adjuncts deserve more attention. An interesting area for research that has only been briefly touched upon here is the external syntax and semantics of participial adjuncts. Among other things, this could include a cross-linguistic comparison of the many adverbial interpretations and control relations these adjuncts allow, the positions they adjoin to and possible connections between syntax and semantics in this respect. For instance, a comparison with Haegeman's (2012) typology of adjuncts would be an interesting area for further research. Taken together with the analysis provided above, new insights into these aspects of participial adjuncts would contribute significantly to our understanding of both small clauses and adjuncts cross-linguistically.

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References

Abney, Steven Paul. 1987. *The English noun phrase in its sentential aspect*. Doctoral dissertation, MIT.

Acquaviva, Paolo. 2009. Roots and lexicality in Distributed Morphology. In *York-Essex Morphology Meeting 5: Special issue of York Working Papers in Linguistics*, eds. Alexandra Galani, Daniel Redinger, and Norman Yeo, 1–21. York: University of York, Department of Language and Linguistic Science.

Adger, David. 2003. *Core Syntax: A Minimalist Approach*. Oxford: Oxford University Press.

Alexiadou, Artemis. 2013. Nominal vs. verbal -ing constructions and the development of the English progressive. *English Linguistics Research* 2 (2): 126–140. https://doi.org/10.5430/elr.v2n2p126.

Alexiadou, Artemis. 2014. Roots don't take complements. *Theoretical Linguistics* 40 (3/4): 287–297. https://doi.org/10.1515/tl-2014-0012.

Alexiadou, Artemis, and Elena Anagnostopoulou. 2008. Structuring Participles. In *Proceedings of the 26th West Coast Conference on Formal Linguistics*, eds. Charles Chang and Hannah J.. Haynie. Somerville, MA: Cascadilla Proceedings Project.

Alexiadou, Artemis, Elena Anagnostopoulou, and Florian Schäfer. 2015. *External arguments in transitivity alternations: A layering approach*. Oxford Studies in Theoretical Linguistics. Oxford: Oxford University Press.

Alexiadou, Artemis, Berit Gehrke, and Florian Schäfer. 2014. The argument structure of adjectival participles revisiteds. *Lingua* 149: 118–138. https://doi.org/10.1016/j.lingua.2014.05.018.

Anagnostopoulou, Elena. 2003. Participles and voice. In *Perfect explorations*, eds. Artemis Alexiadou, Monika Rathert, and Arnim von Stechow, 1–36. Berlin/Boston: De Gruyter Mouton.

Andresen, Karl G. 1854. Über absolute Participial-Construction im Deutschen. *Archiv Für Das Studium Der Neueren Sprachen Und Literaturen* 16: 72–93.

Annema, Hedman. 1924. *Die sogenannten absoluten Partizipialkonstruktionen im Neuhochdeutschen*. Groningen: M. de Waal.

Aoun, Joseph, and Dominique Sportiche. 1983. On the formal theory of Government. *The Linguistic Review* 2 (3): 211–236.

Baker, Mark. 1985. The Mirror Principle and morphosyntactic explanation. *Linguistic Inquiry* 16 (3): 373–415.

Bech, Gunnar. 1983. *Studien über das deutsche Verbum infinitum*, vol. 139. Linguistische Arbeiten. Tübingen: Niemeyer.
Behaghel, Otto. 1924. *Deutsche Syntax: Eine geschichtliche Darstellung*. Band II: Die Wortklassen und Wortformen. Heidelberg: Winter.
Belletti, Adriana. 1990. *Generalized verb movement. Aspects of verb syntax*. Torino: Sellier.
Bianchi, Valentina. 2003. On finiteness as logophoric anchoring. In *Temps et point de vue/Tense and point of view*, eds. Jacqueline Guerón and Liliane Tasmowski, 213–246. Nanterre: Université Paris X.
Blatz, Friedrich. 1900. *Neuhochdeutsche Grammatik. Satzlehre*. Karlsruhe: Mit Berücksichtigung der historischen Entwickelung der deutschen Sprache.
Borer, Hagit. 2003. Exo-skeletal vs. endo-skeletal explanations: Syntactic projections and the lexicon. In *The nature of explanation in linguistic theory*, eds. John Moore and Maria Polinsky, 31–67. Stanford, CA: CSLI Publications.
Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24 (4): 591–656.
Bowers, John. 2001. Predication. In *The Handbook of Contemporary Syntactic Theory*, eds. Mark Reuben Baltin and Chris Collins, 299–333. Malden, MA/Oxford: Blackwell.
Brodahl, Kristin K. 2016. *Zu deutschen Partizipialkonstruktionen mit dem Partizip 1 als Kern: eine syntaktisch-semantische Untersuchung*. Master's Thesis, NTNU, Trondheim.
Brodahl, Kristin K. 2018. Zur Syntax und Semantik adverbialer Partizipialkonstruktionen mit dem Partizip 1 im Deutschen. *Deutsche Sprache* 46: 289–314. https://doi.org/10.37307/j.1868-775X.2018.04.02.
Brodahl, Kristin K. 2020. Partizipialkonstruktionen im Deutschen: Eine syntaktisch-semantische Typologie. *Deutsche Sprache* 48: 249–279. https://doi.org/10.37307/j.1868-775X.2020.03.05.
Brodahl, Kristin K., and Inghild Flaate Høyem. 2018. Adverbiale Partizipialkonstruktionen im Deutschen mit dem Partizip 1 als Kern. In *Sprachen verbinden. Beiträge der 24. Linguistik- und Literaturtage, Brno/Tschechien, 2016*, eds. V.ěra Janíková, Alice Brychová, Java Veličková, and Roland Wagner, 119–127. Hamburg: Verlag Dr. Kovač.
Brody, Michael. 2000. Mirror theory: Syntactic representation in perfect syntax. *Linguistic Inquiry* 31 (1): 29–56. https://doi.org/10.1162/002438900554280.
Bruening, Benjamin. 2013. *By*-Phrases in passives and nominals. *Syntax* 16: 1–41. https://doi.org/10.1111/j.1467-9612.2012.00171.x.
Bruening, Benjamin. 2014. Word formation is syntactic: Adjectival passives in English. *Natural Language and Linguistic Theory* 32: 363–422. https://doi.org/10.1007/s11049-014-9227-y.
Bungarten, Theo. 1976. *Präsentische Partizipialkonstruktionen in der deutschen Gegenwartssprache*, vol. 38. Sprache der Gegenwart, Schriften des Instituts für deutsche Sprache. Düsseldorf: Schwann.
Businger, Martin. 2011. *<Haben> als Vollverb: Eine dekompositionale Analyse. Linguistische Arbeiten*, vol. 538. Berlin/New York: De Gruyter.
Busterud, Guro. 2014. *Anaforiske bindingskonstruksjoner i norsk som andrespråk*. Doctoral dissertation, NTNU, Trondheim.
Chomsky, Noam. 1970. Remarks on nominalization. In *Readings in English Transformational Grammar*, eds. Roderick A.. Jacobs and Peter S.. Rosenbaum, 184–221. Waltham, MA: Ginn.
Chomsky, Noam. 1981. *Lectures on Government and Binding. The Pisa lectures*, vol. 9. Studies in Generative Grammar. Dordrecht: Foris.
Chomsky, Noam. 1995. Bare phrase structure. In *Evolution and revolution in linguistic theory: A festschrift in honor of Carlos Otero*, eds. Héctor. Campos and Paula Kempchinsky, 51–109. Washington, DC: Georgetown University Press.
Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step*, eds. Roger Martin, David Michaels, and Juan Uriagereka, 89–255. Cambridge, MA: MIT Press.
Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in language*, eds. Michael Kenstowicz, 1–52. Cambridge, MA: MIT Press.
Citko, Barbara. 2011. Small clauses. *Language and Linguistics Compass* 5 (10): 748–763. https://doi.org/10.1111/j.1749-818X.2011.00312.x.
Curme, George O. 1974. *A grammar of the German language*. New York: Gordon Press.
Czepluch, Helmut. 1996. *Kasus im Deutschen und Englischen. Linguistische Arbeiten*, vol. 349. Tübingen: Niemeyer.
Dittmer, Arne. 1983. Über das Partizip 1 im Deutschen. *Kopenhagener Beiträge Zur Germanistischen Linguistik* 21: 93–116.
Dubinsky, Stanley, and Kemp Williams. 1995. Recategorization of prepositions as complementizers: The case of temporal prepositions in English. *Linguistic Inquiry* 26 (1): 125–137.

Duffley, Patrick J. 2000. Gerund versus infinitive as complement of transitive verbs in English: The problems of "tense" and "control." *Journal of English Linguistics* 28: 221–248.
Egerland, Verner. 2002. On absolute constructions and the acquisition of tense. *Working Papers in Scandinavian Syntax* 69: 77–120.
Embick, David. 1997. *Voice and the interfaces of syntax*. Doctoral dissertation, University of Pennsylvania.
Embick, David. 2004. On the structure of resultative participles in English. *Linguistic Inquiry* 35 (3): 355–392.
Embick, David. 2015. *The morpheme: A theoretical introduction*. Berlin/München/Boston: De Gruyter Mouton.
Embick, David. 2021. The motivation for roots in Distributed Morphology. *Annual Review of Linguistics* 7: 8.1-8.20. https://doi.org/10.1146/annurev-linguistics-040620-061341.
Embick, David, and Rolf Noyer. 2007. Distributed Morphology and the syntax-morphology interface. In *The Oxford Handbook of Linguistic Interfaces*, eds. Gillian C. Ramchand and Charles Reiss, 189–324. Oxford: Oxford University Press.
Emonds, Joseph. 1976. *A transformational approach to English syntax: Root, structure-preserving, and local transformations*. New York: Academic Press.
Emonds, Joseph. 1985. *A unified theory of syntactic theories. Studies in Generative Grammar*, vol. 19. Dordrecht: Foris.
Emonds, Joseph. 2004. Unspecified categories as the key to root constructions. In *Peripheries: Syntactic edges and their effects*, eds. David Adger, Cécile. de Cat, and George Tsoulas, 75–120. Dordrecht: Springer.
Fabricius-Hansen, Catherine, and Dag T. T. Haug. 2012. Co-eventive adjuncts: Main issues and clarifications. In *Big events, small clauses: The grammar of elaboration*, eds. Catherine Fabricius-Hansen and Dag T. T.. Haug, 23–54. Berlin/Boston: De Gruyter.
Fabricius-Hansen, Catherine, Dag T. T. Haug, and Kjell-Johan. Sæbø. 2012. Closed adjuncts: Degrees of pertinence. In *Big events, small clauses: The grammar of elaboration*, eds. Catherine Fabricius-Hansen and Dag T. T.. Haug. Berlin/Boston: De Gruyter.
Filipović, Nada. 1977. *Die Partizipialkonstruktionen in der deutschen dichterischen Prosa von heute*, vol. 32. Forschungsberichte des Instituts für Deutsche Sprache. Tübingen: Narr.
Fischer, Silke. 2005. *Towards an optimal theory of reflexivization*. Doctoral dissertation, University of Tübingen.
Fischer, Silke. 2003. Optimale Reflexivierung. In *Arbeiten zur Reflexivierung*, vol. 481, eds. Lutz Gunkel, Gereon Müller, and Gisela Zifonun. Linguistische Arbeiten, 51–73. Niemeyer: Tübingen.
Fischer, Silke. 2018. Locality, control, and non-adjoined islands. *Glossa: A Journal of General Linguistics* 3 (1): 1–40. https://doi.org/10.5334/gjgl.182.
Fischer, Silke, and Inghild Flaate Høyem. 2022. Adjunct control in German, Norwegian, and English. *Journal of Comparative Germanic Linguistics* 25: 1–41. https://doi.org/10.1007/s10828-022-09132-0.
Flaate, Inghild. 2007. *Die "als"-Prädikative im Deutschen: Eine syntaktisch-semantische Analyse*, vol. 71. Studien zur deutschen Grammatik. Tübingen: Stauffenburg.
Gehrke, Berit. 2011. Stative passives and event kinds. In *Proceedings of Sinn und Bedeutung 15*, eds. Ingo Reich, Eva Horch, and Dennis Pauly, 241–257. Saarbrücken: Universaar.
Gehrke, Berit. 2012. Passive states. In *Telicity, change, and state: A cross-categorial view of event structure*, eds. Violeta Demonte and Louise McNally. Oxford: Oxford University Press.
George, Leland M., and Jaklin Kornfilt. 1981. Finiteness and boundedness in Turkish. In *Binding and filtering*, eds. Frank Heny, 105–127. London: Croom Helm.
Haegeman, Liliane. 2012. *Adverbial clauses, main clause phenomena, and the composition of the left periphery*, vol. 8. The Cartography of Syntactic Structures. Oxford: Oxford University Press.
Haegeman, Liliane, and Terje Lohndal. 2010. Negative concord and (multiple) Agree: A case study of West Flemish. *Linguistic Inquiry* 41 (2): 181–211. https://doi.org/10.1162/ling.2010.41.2.181.
Halle, Morris, and Alec Marantz. 1993. Distributed Morphology and the pieces of inflection. In *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, eds. Kenneth Hale and Samuel Jay Keyser, 111–176. Cambridge, MA: MIT Press.
Harley, Heidi, and Rolf Noyer. 1999. Distributed Morphology. *Glot International* 4: 3–9.
Hasselgård, Hilde. 2012. Possessive absolutes in English and their Norwegian correspondences. In *Big events, small clauses: The grammar of elaboration*, eds. Catherine Fabricius-Hansen and Dag T. T.. Haug, 229–258. Berlin/Boston: De Gruyter.

Haug, Dag T. T., Catherine Fabricius-Hansen, Bergljot Behrens, and Hans Petter Helland. 2012. Open adjuncts: Degrees of event integration. In *Big events, small clauses. The grammar of elaboration*, eds. Catherine Fabricius-Hansen and Dag T. T.. Haug, 131–178. Berlin/Boston: De Gruyter.

Helbig, Gerhard. 1983. *Studien zur deutschen Syntax*. Leipzig: Verlag Enzyklopädie.

Helland, Hans Petter, and Anneliese Pitz. 2012. Open adjuncts: Participial syntax. In *Big events, small clauses: The grammar of elaboration*, eds. Catherine Fabricius-Hansen and Dag T. T.. Haug, 93–130. Berlin/Boston: De Gruyter.

Helland, Hans Petter, and Anneliese Pitz. 2014. Participles in contrast. In *Corpus-based studies in contrastive linguistics*, vol. 6, eds. Signe Oksefjell Ebeling, Atle Grønn, Kjetil Rå. Hauge, and Diana Santos. Oslo Studies in Language, 229–250. Oslo: University of Oslo.

Horn, George M. 1975. On the nonsentential nature of the POSS-ing construction. *Linguistic Analysis* 1: 333–388.

Hornstein, Norbert. 1999. Movement and control. *Linguistic Inquiry* 30 (1): 69–96.

Høyem, Inghild F. 2018a. Adjunktkontrolle im Deutschen. *Linguistische Berichte* 255: 92–141.

Høyem, Inghild F. 2018b. Über die Syntax sog Absoluter Konstruktionen im Deutschen. *Deutsche Sprache* 46: 121–141. https://doi.org/10.37307/j.1868-775X.2018.02.03.

Høyem, Inghild F. 2019. Zur Syntax und Semantik absoluter *mit*-Sätzchen im Deutschen. *Linguistische Berichte* 260: 471–502.

Høyem, Inghild F., and Kristin Klubbo Brodahl. 2019. Über den Kontrollstatus deutscher Partizipialkonstruktionen mit dem Partizip 2 als Kern. *Deutsche Sprache* 47: 98–124. https://doi.org/10.37307/j.1868-775X.2019.02.03.

Huddleston, Rodney, and Geoffrey K. Pullum. 2002. *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.

Jespersen, Otto. 1961. *A modern English grammar on historical principles. Part V: Syntax*. London: Allen & Unwin.

Johnson, Kyle. 1988. Clausal gerunds, the ECP, and government. *Linguistic Inquiry* 19 (4): 583–609.

Julien, Marit. 2002. *Syntactic heads and word formation*. Oxford Studies in Comparative Syntax. Oxford: Oxford University Press.

König, Ekkehard. 1995. The meaning of converb constructions. In *Converbs in cross-linguistic perspective*, eds. Martin Haspelmath and Ekkehard König, 57–95. Berlin/Boston: De Gruyter Mouton.

König, Ekkehard, and Johan van der Auwera. 1990. Adverbial participles, gerunds and absolute constructions in the languages of Europe. In *Towards a typology of European languages*, eds. Johannes Bechert, Giuliano Bernini, and Claude Buridant, 337–355. Berlin/New York: De Gruyter Mouton.

Kortmann, Bernd. 1988. Freie Adjunkte und absolute Konstruktionen im Englischen und Deutschen. *Papiere Zur Linguistik* 38: 61–89.

Kortmann, Bernd. 1991. *Free adjuncts and absolutes in English: Problems of control and interpretation*. London/New York: Routledge.

Kortmann, Bernd. 1995. Adverbial participial clauses in English. In *Converbs in cross-linguistic perspective*, eds. Martin Haspelmath and Ekkehard König, 189–237. Berlin/Boston: De Gruyter Mouton.

Kratzer, Angelika. 1996. Severing the external argument from its verb. In *Phrase structure and the lexicon*, eds. Johan Rooryck and Laurie Ann Zaring, 109–137. Dordrecht: Kluwer.

Kratzer, Angelika. 2000. Building statives. In *Proceedings of the Twenty-sixth Annual Meeting of the Berkeley Linguistics Society: General session and parasession on aspect*, eds. Lisa J.. Conathan, Jeff Good, Darya Kavitskaya, Alyssa B.. Wulf, and Alan C. L.. Yu, 385–399. Berkeley, CA: Berkeley Linguistics Society.

Kwaśniak, Renata. 2012. *Infinitiv- und Partizipialkonstruktionen. Ihre Strukturen und Funktionen am Beispiel Thomas Manns*, vol. 25. Berliner Sprachwissenschaftliche Studien. Berlin: Weidler.

Laka, Itziar. 1990. *Negation in syntax: On the nature of functional categories and projections*. Doctoral dissertation, MIT.

Laka, Itziar. 1994. *On the syntax of negation*. New York/London: Garland.

Landau, Idan. 2000. *Elements of control. Structure and meaning in infinitival constructions*, vol. 51. Studies in Natural Language and Linguistic Theory. Dordrecht: Kluwer.

Lee, Young-Ok. 1987. A study on *-ing* constructions. *Language Research* 23 (4): 629–646.

Lohndal, Terje. 2020. Syntactic categorization of roots. In *Oxford research encyclopedia of linguistics*. Oxford: Oxford University Press. https://doi.org/10.1093/acrefore/9780199384655.013.257

Lohndal, Terje. 2014. *Phrase structure and argument structure: A case-study of the syntax-semantics interface*. Oxford: Oxford University Press.
Lohndal, Terje. To appear. The exoskeletal model. In *The Cambridge handbook of distributed morphology*, eds. Artemis Alexiadou, Ruth Kramer, Alec Marantz, and Isabel Oltra-Massuet. Cambridge: Cambridge University Press.
Lundquist, Björn. 2008. *Nominalizations and participles in Swedish*. Doctoral dissertation, University of Tromsø.
Lundquist, Björn. 2013. The category of participles. In *Categorization and category change*, eds. Isabelle Roy, Gianina Iordachioaia, and Kaori Takamine. Newcastle upon Tyne: Cambridge Scholars Publishing.
Manzini, M. Rita., and Kenneth Wexler. 1987. Parameters, binding theory, and learnability. *Linguistic Inquiry* 18 (3): 413–444.
Marantz, Alec. 1997. No escape from syntax: Don't try morphological analysis in the privacy of your own lexicon. *University of Pennsylvania Working Papers in Linguistics* 4: 201–225.
Matushansky, Ora. 2006. Head movement in linguistic theory. *Linguistic Inquiry* 37 (1): 69–109. https://doi.org/10.1162/002438906775321184.
McCawley, James D. 1983. What's with *with*? *Language* 59 (2): 271–287.
Milsark, Gary L. 1988. Singl-*ing*. *Linguistic Inquiry* 19 (4): 611–634.
Ojea, Ana. 2011. Propositional gerunds in English and Spanish. *Journal of English Studies* 9: 165–182. https://doi.org/10.18172/jes.170.
Paul, Hermann. 1959. *Deutsche Grammatik: Teil IV, Syntax (Erste Hälfte)*. Niemeyer.
Paul, Hermann. 1968. *Deutsche Grammatik: Teil IV, Syntax (Zweite Hälfte)*. Halle: Niemeyer.
Pesetsky, David, and Esther Torrego. 2004. Tense, case and the nature of syntactic categories. In *The syntax of time*, eds. Jacqueline Guéron and Jacqueline Lecarme, 495–538. Cambridge, MA: MIT Press.
Pires, Acrisio. 2006. *The minimalist syntax of defective domains: Gerunds and infinitives*. Linguistik Aktuell/Linguistics Today. Amsterdam/Philadelphia: John Benjamins.
Pires, Acrisio. 2007. The derivation of clausal gerunds. *Syntax* 10 (2): 165–203. https://doi.org/10.1111/j.1467-9612.2007.00100.x.
Platzack, Christer, and Anders Holmberg. 1989. The role of AGR and finiteness. *Working Papers in Scandinavian Syntax* 43: 51–76.
Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech, and Jan Svartvik. 1985. *A grammar of contemporary English*. London: Longman.
Ramchand, Gillian C. 2008. *Verb meaning and the lexicon: A first phase syntax*. Cambridge: Cambridge University Press.
Ramchand, Gillian C., and Peter Svenonius. 2014. Deriving the functional hierarchy. *Language Sciences* 46: 152–174. https://doi.org/10.1016/j.langsci.2014.06.013.
Rapp, Irene. 1996. Zustand? Passiv? - Überlegungen zum sogenannten "Zustandspassiv." *Zeitschrift Für Sprachwissenschaft* 15 (2): 231–265.
Rath, Rainer. 1971. Die Partizipialgruppe in der deutschen Gegenwartssprache. In *Schriften des Instituts für Deutsche Sprache*, vol. 12, eds. Henning Lobin and Mechthild Habermann. Düsseldorf: Schwann.
Reuland, Eric J. 1983. Governing *-ing*. *Linguistic Inquiry* 14 (1): 101–136.
Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar: Handbook in generative syntax*, eds. Liliane Haegeman, 281–337. Dordrecht: Kluwer.
Roberts, Ian. 2010. *Agreement and head movement: Clitics, incorporation, and defective goals*, vol. 59. Linguistic Inquiry Monographs. Cambridge, MA: MIT Press.
Rouveret, Alain. 1980. Sur la notion de proposition finie. *Langages* 60: 75–107.
Salvi, Giampaolo, and Laura Vanelli. 1992. *Grammatica essenziale di riferimento della lingua italiana*. Firenze: Le Monnier.
Schlücker, Barbara. 2005. Event-related modifiers in German adjectival passives. In *Proceedings of Sinn und Bedeutung 9*, eds. Emar Maier, Corien Bary, and Janneke Huitink, 417–430. Nijmegen: Nijmegen Centre of Semantics.
Schütze, Carson T. 1997. *INFL in child and adult language: Agreement, case and licensing*. Doctoral dissertation, MIT, Cambridge, MA.
Schütze, Carson T. 2001. On the nature of default case. *Syntax* 4 (3): 205–238. https://doi.org/10.1111/1467-9612.00044.

Skartsæterhagen, Solveig. 2006. *Zu den so genannten absoluten Akkusativ-Konstruktionen im Deutschen*. Master's Thesis, NTNU, Trondheim.
Starke, Günter. 1996. Partizipialkonstruktionen und freie Fügungen am Satzanfang mit und ohne Subjektbezug. *Deutsch Als Fremdsprache* 33 (1): 10–14.
Starke, Günter. 1999. Partizipialgruppen mit Textbezug. In *Linguistik und Deutsch als Fremdsprache: Festschrift für Gerhard Helbig zum 70. Geburtstag*, eds. Bernd Skibitzki and Barbara Wotjak, 201–207. Niemeyer.: Tübingen.
Stowell, Tim. 1981. *Origins of phrase structure*. Doctoral dissertation, MIT.
Stowell, T. 1982. The tense of infinitives. *Linguistic Inquiry* 13 (3): 561–570.
Stowell, Tim. 1983. Subjects across categories. *The Linguistic Review* 2: 285–312.
Stump, Gregory T. 1985. *The semantic variability of absolute constructions*. Texts and Studies in Linguistics and Philosophy. Dordrecht/Boston/Lancaster: D. Reidel Publishing Company.
Thurén, Camilla. 2008. *The syntax of the Swedish present participle*. Doctoral dissertation, Lund University.
Truswell, Robert. 2011. *Events, phrases, and questions*, vol. 33. Oxford Studies in Theoretical Linguistics. Oxford: Oxford University Press.
van de Pol, Nikki, and Peter Petré. 2015. Why is there a present-day English absolute? *Studies in Language* 39 (1): 198–228. https://doi.org/10.1075/sl.39.1.07pol.
van Riemsdijk, Henk. 1982. Zum Rattenfängereffekt bei Infinitiven in deutschen Relativsätzen. *Groninger Arbeiten Zur Germanistischen Linguistik* 21: 83–102.
Wasow, Thomas. 1977. Transformations and the Lexicon. In *Formal syntax*, eds. Peter W. Culicover, Thomas Wasow, and Adrian Akmajian, 327–360. New York: Academic Press.
Wasow, Thomas, and Thomas Roeper. 1972. On the subject of gerunds. *Foundations of Language* 8 (1): 44–61.
Williams, Edwin S. 1975. Small clauses in English. In *Syntax and Semantics*, vol. 4, eds. John P. Kimball, 249–273. New York: Academic Press.
Wurmbrand, Susi. 2003. *Infinitives. Studies in Generative Grammar*, vol. 55. Berlin/Boston: De Gruyter Mouton.
Wurmbrand, Susi. 2014a. Tense and aspect in English infinitives. *Linguistic Inquiry* 45 (3): 403–447. https://doi.org/10.1162/ling_a_00161.
Wurmbrand, Susi. 2014b. The Merge Condition: A syntactic approach to selection. In *Minimalism and beyond. Radicalizing the interfaces*, vol. 11, eds. Peter Kosta, Steven L.. Franks, Teodora Radeva-Bork, and Lilia Schürcks. Language Faculty and Beyond Internal and External Variation in Linguistics, 130–166. Amsterdam/Philadelphia: John Benjamins.
Wurmbrand, Susi, and Koji Shimamura. 2017. The features of the voice domain: Actives, passives, and restructuring. In *The Verbal Domain*, eds. Roberta D'Alessandro, Irene Franco, and Ángel. J.. Gallego. Oxford: Oxford University Press.
Zanuttini, Raffaella. 1996. On the relevance of tense for sentential negation. In *Parameters and functional heads*, eds. Adriana Belletti and Luigi Rizzi. Essays in comparative syntax, 181–207. Oxford: Oxford University Press.
Zanuttini, Raffaella. 1997. *Negation and clausal structure. A comparative study of Romance languages*. Oxford Studies in Comparative Syntax. Oxford: Oxford University Press.
Zeijlstra, Hedde. 2012. There is only one way to agree. *The Linguistic Review* 29 (3): 491–539. https://doi.org/10.1515/tlr-2012-0017.