

Parasitic participles in Germanic: Evidence for the theory of verb clusters

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Abstract¹

This paper investigates a series of Germanic verb constructions, which appear to involve the ‘wrong’ morphology on one or more of the verbs involved: Norwegian parasitic participles, Frisian upward and downward parasitic participles, and the German Skandal construction. I provide an explicit syntactic account unifying the phenomena and deriving the differences from independent differences among the languages. These apparently odd constructions are shown to be subject to specific distributional restrictions which are fully in line with standard grammatical principles of the languages under consideration. The account is based on a top-down definition of Agree, namely the claim that an unvalued feature is valued by the closest c-commanding element with the appropriate valued feature. I demonstrate that this view allows for a uniform treatment of the morphological and syntactic properties of these constructions, which, so far, have been assumed to be unrelated. Lastly, I argue that different word orders in verb clusters can be derived either by syntactic movement (in which case locality conditions have to be obeyed and new Agree(ment) relations are formed) or by pf-linearization of sister nodes (in which case no locality effects are observed and no new Agree(ment) relations are established).

1. Introduction

Over the past decades, several empirical and experimental studies have uncovered a wealth of data regarding the distribution of verb clusters across West Germanic. While earlier works often concentrated on some “standard” variety of a language, detailed investigations of dialectal variation have shown that the distribution is much more diverse than is often claimed. In verb clusters

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consisting of three verbal elements, for instance, all six logical word orders are attested. While the distribution varies depending on the language/dialect and construction, one construction – the *infinitivus pro participio* (IPP) construction – occurs in all six orders (see Wurmbrand 2004b, 2006b for a summary of the first five orders in West Germanic; Schmid and Vogel 2004 for the 2-1-3 order, and Barbiers 2005, Barbiers et al. 2008 for extensive overviews of the distribution of verb clusters in Dutch):

- (1) a. 1-2-3: Dutch, Swiss German, West Flemish (some contexts)
 b. 3-2-1: Frisian, some German dialects
 c. 1-3-2: Standard German
 d. 3-1-2: Austrian, some German dialects
 e. 2-3-1: Afrikaans, West Flemish (some contexts)
 f. 2-1-3: St. Gallen (Swiss), Rheiderländer Platt (Low German)²

The distribution of word orders in verb clusters has raised many interesting theoretical questions. One issue I will concentrate on in this paper is the question of where the ordering of verbs is established, specifically, the question of whether the different word orders are derived in syntax via movement operations or post-syntactically as part of PF linearization. In Wurmbrand (2004a), I suggested that in certain constructions, the word order is sensitive to the morphological properties of the verbs involved, in particular that the IPP feeds verb cluster reordering. If the IPP is assumed to be a PF phenomenon, rather than a syntactic phenomenon (see also Zwart 2007), this then entails that at least some determination of the linear order takes place post-syntactically. In this paper, I will provide a new argument for (a version of) this view.

The main claim I argue for is that verb cluster orders can be established, in principle, in two ways: by syntactic movement (in which case new syntactic dependencies are created and syntactic constraints are in effect) or by PF linearization (in which case the syntactic structure remains unaffected and no syntactic constraints are at work). I assume that in cases where two items mutually c-command each other, directionality is not encoded in syntax, but that head-final vs. head-initial orderings are derived by language-specific PF linearization rules of the form “a head {precedes/follows} its sister”. For verb clusters involving three verbs, a system that allows both syntactic movement and PF linearization then yields the picture in (2). Following the standard as-

2 The 2-1-3 order is admittedly very rare and it is still controversial whether this order is a true verb cluster order or a simple 2-1 order with the verb phrase corresponding to 3 being extraposed, as for instance suggested in Zwart (2007) for certain constructions. The distribution of this order would then reduce to the question of which VPs can be extraposed.

sumption that asymmetric c-command is linearized left-to-right, no movement takes place in the 1-2-3 order. Assuming that PF linearization applies only to determine the linear order of sister nodes (i.e., there is no actual PF-movement), of the six possible orders in verb clusters, only four orders can be derived without movement, solely by PF linearization ((2)a-d); the 3-1-2 and 2-1-3 orders must involve some syntactic movement. The “special” PF linearization rules (i.e., the ones that do not follow from the default assumption that asymmetric c-command yields a left-to-right ordering) are set in bold.

(2)		a.	1-2-3:	—		[PF: left-to-right]
		b.	3-2-1:	Movement	OR	PF: 1 after 2P ; 2 after 3P
		c.	1-3-2:	Movement	OR	PF: 1 before 2P; 2 after 3P
		d.	2-3-1:	Movement	OR	PF: 1 after 2P ; 2 before 3P
		e.	3-1-2:	Movement		[PF: left-to-right]
		f.	2-1-3:	Movement	OR	PF: 1 after 2P Extrapolation

In this paper, I will provide an argument for the claim that the 3-2-1 order can be derived in two different ways. The argument will be based on apparent mismatches of the selectional properties of verbs in certain verb clusters. I will establish that there are two types of ‘mismatches’ which receive a simple account under a model which involves a specific downward licensing configuration, which I will argue is *Reverse Agree*. Crucially, Type #1 will be shown to require a 1-2-3 configuration in syntax, thus no syntactic movement can occur despite the fact that the word order is 3-2-1. Type #2 will require a 3-2-1 syntax, hence movement will be motivated. In short, the argument is that if the word order results from syntactic movement, new hierarchical relations are created in syntax, which feed into morphology as apparent “upwards” selection. Crucially, in this (and only this) case, syntactic locality effects emerge restricting the morphological forms. If the order results from head-final PF linearization, no new syntactic dependencies are created and the morphological realizations are not subject to the locality effects found in the movement construction. While this account leaves open the question of why there can be two ways to derive the same word order, it has the advantage that it unifies several phenomena across Germanic which, so far, have not been given a uniform account.

2. Parasitic participles – Type #1

2.1. Main properties

Several Germanic languages allow what I will refer to as *parasitic participles*; that is, participles selected by a modal, which normally can only combine with

an infinitival complement. Examples from Norwegian and Frisian are given in (3). The parasitic participles are set in bold; the auxiliaries are underlined.

- (3) a. *Jeg hadde villet **lest** / lese boka* Norwegian
 I had want.PART **read.PART** / read.INF book.DEF
 'I would have liked to read the book.' [Wiklund 2001 :201]
- b. *hy soe it **dien** / dwaan wollen ha* Frisian
 he would it **do. PART** / do.INF want.PART have.INF
 'He would have liked to do it.' [den Dikken and Hoekstra 1997: 1058]
- c. *Ik bin tankber dat ik sa folle **dien** kinnen haw [...]*
 I am thankful that I so much **do.PART** can.PART have
 'I'm grateful that I was able to do so much...'
 [E. Hoekstra, p.c., from corpus]

The common properties of parasitic participles are: i) the parasitic form is optional; parasitic participles always alternate with infinitives; ii) parasitic participles are only possible when there is an appropriate licensing head – an overt or covert auxiliary (as German will show not necessarily another participle); iii) the parasitic morphology is semantically vacuous; parasitic participles are not interpreted as a perfectives, but rather the meaning is identical to the meaning of the infinitival construction (see Wiklund 2005, 2007 for a caveat about covert auxiliaries and arguments against a necessary counterfactual interpretation).

There are three major analyses of parasitic participles: den Dikken and Hoekstra's (1997) checking approach, Wiklund's (2005, 2007) *Inverse Agree* approach, and Vogel's (2009) *Optimality Theory* approach. Since there are significant differences among the languages when and where parasitic forms are possible, the previous accounts have not aimed at a unified analysis for all parasitic constructions. According to den Dikken and Hoekstra's (1997) checking approach, which is set in the early Minimalist framework (Chomsky 1995), participles come equipped with a feature that needs to enter a local relation with the same feature on an auxiliary. In that framework, the local relation was considered to be a specifier-head relation. Den Dikken and Hoekstra (1997) propose that an auxiliary can check features on one or more participles in its specifier. Movement of participles to the specifier position of an auxiliary is thus necessary, which straightforwardly accounts for parasitic participles in Frisian. As shown in (4), assuming an underlying 1-2-3 order, movement of the participles to the specifier of the auxiliary creates the 3-2-1 word order, which is obligatory in Frisian (cf. (3b,c)). The checked features are indicated via strike-through in the diagram.

participle. In Wurmbrand (2010, to appear), I follow Wiklund's original idea and develop a detailed formalism referred to as *Reverse Agree* that allows us to derive the properties of parasitic participles. I will lay out this theory in the next section. In addition to implementing the licensing relation needed for parasitic participles in a general framework of syntactic dependencies, the theory proposed there also provides a unified account of the distribution of parasitic participle constructions across Germanic, with the cross-linguistic differences being attributed to independent language-specific differences in the syntax and morphology of these languages. In what follows, I will restrict the summary of the analysis of parasitic participles to the parts relevant for the distribution of verb clusters. For detailed derivations and motivation of the assumptions made, the reader is referred to the complete analysis provided in Wurmbrand (2010).

2.2. *Reverse Agree*

A current view on syntactic features is that features can be *interpretable* (i.e., they carry information relevant and necessary for the interpretation; henceforth *iF*) or *uninterpretable* (i.e., features that are irrelevant for the semantics but may be expressed morphologically; henceforth *uF*). Furthermore, several researchers have proposed that there is a second distinction for features: *valued* (F: val) or *unvalued* (F: $_$). Features can be valued (i.e., specified for a specific morphological or semantic value such as PAST, INFINITIVE, PLURAL, FEMININE etc.) or they can originate unvalued (i.e. unspecified for a specific value), in which case, they need to acquire a value in the course of the syntactic derivation. Following Pesetsky and Torrego (2007), and Bošković (2009, to appear), I assume that interpretability (*i/uF*) does not correlate with valuation, and hence four combinations are possible: *iF*: val, *iF*: $_$, *uF*: val, *uF*: $_$. Regarding feature licensing (i.e., valuation), I assume that the relevant licensing relation is *Reverse Agree*, given in (6) (see Neeleman and Koot 2002, Adger 2003, von Stechow 2003, 2004, 2005, 2009, Baker 2008, Hicks 2009, Haegeman and Lohndal 2010, Zeijlstra, to appear, Bjorkman 2011, Grønn and von Stechow 2011, Merchant 2011 for similar proposals).³

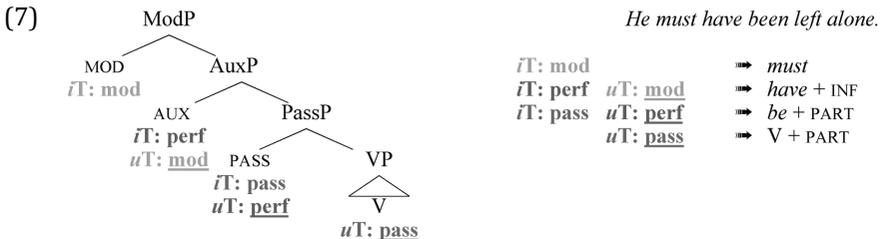
3 In Wurmbrand (2011a, 2012), I argue that *Reverse Agree* unites dependencies such as Case assignment, anaphor binding, control, polarity licensing, negative concord, ellipsis, and the selection of verbal morphology. I show that, in comparison with standard *Agree* à la Chomsky (2000, 2001), as well as the feature sharing version of *Agree* (Pesetsky and Torrego 2007), *Reverse Agree* provides a more straightforward account of the distribution of VP-ellipsis in English, the Germanic IPP-construction, and the complete picture of parasitic participle morphology in Germanic.

(6) *Reverse Agree*

A feature $F: _$ on α is valued by a feature $F: \text{val}$ on β , iff

- i. β asymmetrically c-commands α AND
- ii. There is no γ , γ distinct from β , with a valued interpretable feature F such that γ commands α and is c-commanded by β .

Regarding the distribution of verbal features, I assume that functional clausal heads (T, Mod, Asp etc.) have an interpretable T(ense)-feature which is typically (but not necessarily) valued; the value corresponds to the semantic value of the head (e.g., *t*T: PAST, MODAL, PERFECT). Furthermore, all verbal heads have an uninterpretable T-feature, which is typically (but not necessarily) unvalued. As unvalued features cannot pass the interfaces, $F: _$ must undergo Agree with the closest valued feature. Lastly, the value of the *u*T feature is what is realized at PF (see von Stechow 2003, 2004, 2005, 2009, Grønn and von Stechow 2011) for similar proposals. For instance, the *u*T: $_$ of a verb which is valued by a modal is realized as an infinitive in English; a verb which is valued by a perfect or passive auxiliary is realized as a participle. A sample derivation for an English sentence such as *He must have been left alone* is given in (7) (I ignore *u*T-features of the highest head, since this depends on the properties of the domain above ModP, which is irrelevant for the current paper and I therefore set it aside). Features that have been valued under Agree are underlined.



As illustrated in (7), features are valued in a downward fashion, which guarantees that a verb correctly realizes the morphology “selected” by the higher head. Reverse Agree is thus essentially a syntactic mechanism to implement morphological selection. In the usual case, Agree is equivalent to selection (or ‘government’ in the traditional sense), however there are two scenarios where Reverse Agree and selection yield different results, which will motivate the syntactic approach advocated here. First, if, for some reason, a head (X) which *semantically* selects a verb (Y) is not specified for an *i*T feature, an element higher than X can value Y, and Y will occur with the morphology corresponding to the higher verb rather than the selecting verb. Second, movement, which changes the syntactic Agree configuration (but not the semantic selectional

properties) can affect valuation and a verb will surface in a morphological form different from the form predicted by selection. We will see that parasitic participles provide evidence for both of these cases.

2.3. Parasitic participles – Type #1

Equipped with the theory outlined in the previous section, we can now turn to the basic cases of parasitic participles in Scandinavian and Frisian. Two relevant examples are repeated in (8). In both cases, the structure is AUX»MOD»V, and both the modal and the main verb can occur as participles.

(8) a. *Jeg hadde villet lest / lese boka*
 I had want.PART read.PART / read.INF book.DEF
 ‘I would have liked to read the book.’

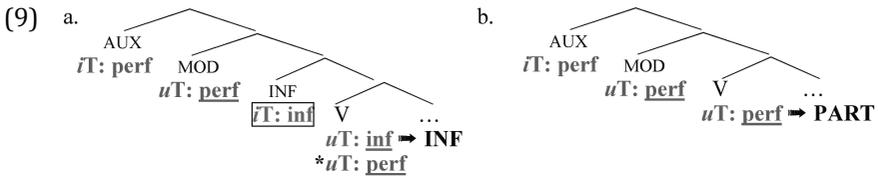
b. *Ik bin tankber dat ik sa folle dien kinnen haw [...]*
 I am thankful that I so much do.PART can.PART have
 ‘I’m grateful that I was able to do so much...’

[E. Hoekstra, p.c., from corpus]

I propose the following basic structures for the infinitival vs. parasitic participle constructions. As shown in (9), the main difference is that modal verbs can combine with different types of complements – a complement as in (9a) which contains an infinitival head carrying an *i*T feature (e.g. an irrealis aspect head) or a smaller complement (e.g., a simple *v*P/*VP* as in (9b)) which lacks such an infinitival tense head and *i*T feature.⁴ These structural differences reflect Wiklund’s observation that parasitic participles are restricted to restructuring contexts, that is, reduced infinitival complements. The different morphological forms then follow from Reverse Agree. While in (9a) the auxiliary values the modal as a participle, it is not close enough to the lowest verb to value that

4 A reviewer wonders about the nature of the *i*T feature in infinitives. In Wurmbrand (2011b), I show that infinitives can involve three types of interpretable temporal elements (tense, a future modal *woll*, or aspect), and I also provide syntactic evidence for the presence of these elements. In case of a *want* in (9a), the temporal element would be the future modal *woll*. As for (9b), the irrealis interpretation would then have to be assumed to be supplied by the modal verb *want* directly. This hypothesis makes certain predictions about different scope options in the two constructions in (9) (see Wurmbrand 2011b for potential phenomena to consider), which, unfortunately, I have not been able to test yet. An alternative to (9a) would be to treat modals as functional heads in the infinitival construction. In that case, the modal itself carries an *i*T: mod, which intervenes between the auxiliary and the main verb, and hence would value the main verb as an infinitive. I do not have evidence to decide between these two options.

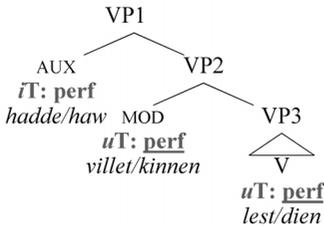
verb as a participle – there is an intervening infinitival head with an *i*T feature which is closer to the main verb, and hence only an infinitive is possible on V. In (9b), on the other hand, the infinitival head is missing, and the auxiliary can Agree with both the modal and the lexical verb, and value both verbal heads as participles. What is “special” about parasitic participle constructions is thus that they lack an infinitival head with an *i*T feature which values the lowest verb as an infinitive.



The analysis correctly accounts for the dependency of parasitic participles on a higher auxiliary – participles require valuation by an auxiliary. Furthermore, since only the auxiliary involves an *i*T feature (*i*T: perf), parasitic participles are not interpreted as perfect/participles, but only morphologically realized as participles.

Lastly, and most relevant for the current paper, parasitic participles in Scandinavian and Frisian are licensed in exactly the same way. That is, both (8a) and (8b) involve the syntactic structure in (9b) – i.e., a structure without syntactic movement of the participles. How then do we end up with different word orders in the two languages? The answer is that the head-final word order in Frisian is an effect of PF linearization (see also Abels 2011). The full derivations for (8) are given in (10).

(10) a.

b. *PF Linearization*For two sister nodes X° and YP:Scandinavian: X° precedes YP
hadde » *villet* » *lest*Frisian: YP precedes X°
dien » *wollen* » *ha*

This approach has the advantage that no word order features need to be stipulated in the syntax, and that syntactic structure can be seen as a strict representation of hierarchical relations, as evidenced by the semantic scope relations among the elements involved (or, as we will see in the next sections, by syntactic dependencies feeding into morphological realization). It has long been known that verb cluster reordering has no effect on meaning. Regarding parasitic participle constructions, in both Scandinavian and Frisian, the structure that needs to feed into semantics is exactly the hierarchical configuration in (10), no matter what the ultimate word order is. The lack of semantic effect, together with the lack of motivation for verb cluster movement, is the biggest puzzle for approaches that derive the word order in verb clusters via syntactic movement. Adding features to syntactic heads that trigger movement is a technical solution to derive different word orders syntactically. But given the variation of word orders found both within and across verb cluster languages (see Wurmbrand 2004b, 2006), it is undeniable that the distribution of these features is entirely stipulated, as it depends not only on the language considered but also on the type of construction (e.g. in Afrikaans, modals precede their infinitival complements, whereas auxiliaries follow their participial complements). The approach here (or other similar non-movement approaches; see Haegeman and van Riemsdijk 1986, Williams 2004, Wurmbrand 2004a, Abels 2011, Salzmann 2011) does not answer the question of what motivates verb cluster reordering, but it shifts the burden to a domain where language-specific assumptions are, at least in certain theoretical views about syntax, more expected and acceptable.

Moreover, I will show in the next section that Frisian allows a second type of parasitic participle construction, which, I argue, is only licensed under movement. Similarly, German (section 3.2) will be shown to have a parasitic participle construction, which is only possible if a certain movement operation applies. These movements will be motivated by the existence of locality restrictions imposed on these constructions. Crucially, the Frisian construction in (8b) behaves differently from the parasitic participle constructions involving movement in that it is not subject to any of the locality effects found in the latter. Rather the distribution of Frisian parasitic participles in (8b) patterns with the distribution of Scandinavian parasitic participles, which sug-

gests that a unified analysis of (8a) and (8b) – i.e., a non-movement analysis – is desirable. Furthermore, if the movement account presented below is on the right track, the existence of two types of parasitic participle constructions in the 3-2-1 order in Frisian challenges a unified PF linearization approach to the ordering of verb clusters and supports the hybrid linearization and movement approach suggested here.

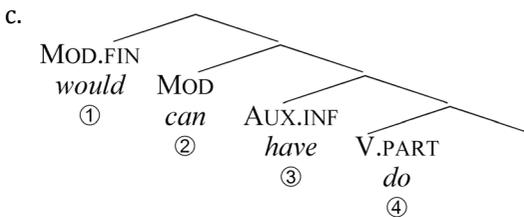
3. Parasitic participles – Type #2

3.1. “Upward” parasitic participles

Frisian allows a second type of parasitic participle construction illustrated in (11a). As shown in (11b,c), the semantic (selectional) structure is *would* » *can* » *have* » *done*; that is, the auxiliary is selected by the modal *can* (which in turn is selected by another modal). Nevertheless, the modal *can* can be morphologically realized as a (parasitic) participle. As before, a regular infinitive is also possible.

- (11) a. *hy soe it dien ha kinne / kinnen* Frisian
 he *would* it do.PART have.INF can.INF / **can.PART**
 ‘he would be able to have it done’
 [den Dikken and Hoekstra 1997: 1070, 1074]

b. [_{CP} 1 [_{TP} 4 3 2]]



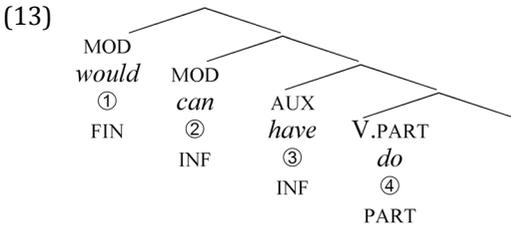
There are two important facts about this apparent “upward” parasitism. First, this construction is restricted to head-final languages (it is also found in the Stellingwerf dialect; see Bloemhoff 1979, Zwart 1995), and impossible in the Scandinavian languages. Second, “upward” parasitic participles are only possible when the verb selecting the parasitic participle (*soe* ‘would’ in (11a)) has moved to verb second position (cf. (12a)). If no parasitic participle is realized (i.e., the modal *can* appears in the infinitive), the head-final line up of the verbs is possible as shown in (12b). Lastly, as shown in (12c), no such restriction is in effect in the regular downward parasitic participle construction (construc-

tions such as (8b) discussed in the previous section). Thus, the restriction in (12a) is a restriction related to “upward” parasitic participle licensing.

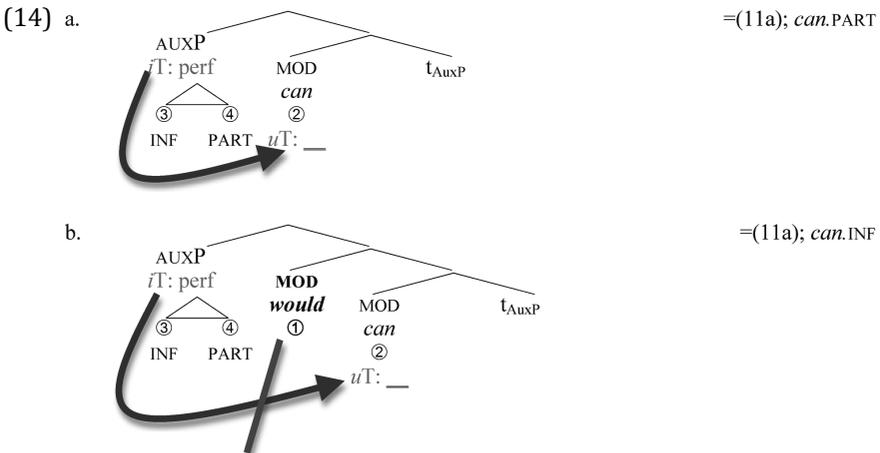
- (12) a. **omdat hy it dien ha kinnen soe*
 because he it do.PART have.INF **can.PART** would
 ‘because he would be able to have done it’
 [den Dikken and Hoekstra 1997: 1070]
- b. *omdat hy it dien ha kinne soe*
 because he it do.PART have.INF can.INF would
 ‘because he would be able to have done it’
 [den Dikken and Hoekstra 1997: 1074]
- c. *omdat hy it dien kinnen ha soe*
Downward parasitic
 because he it **do. PART** can.PART have.INF would
 ‘because he would have been able to do it’
 [den Dikken and Hoekstra 1997: 1066]

I propose that the distribution of “upward” parasitic participle licensing follows from the Reverse Agree account proposed here coupled with the claim that verb cluster reordering can involve PF linearization or syntactic movement. Let us first consider the apparent upward participle licensing in (11) in light of the current feature valuation approach. The question is how a participial form could ever be transferred to a verb *selecting* an auxiliary, that is to a higher verb. For an auxiliary to value a verb as a participle, the auxiliary must asymmetrically c-command that verb (cf. the definition of Agree in (6)). If the auxiliary originates lower than the verb to be valued, as is the case in (11), under the current approach, movement of the auxiliary or auxiliary phrase is necessary to establish the required Agree relation. Note that following Bošković (2007), I assume that phrases can act as valuators (see again the definition in (6)), and, as is standardly assumed, that the features of a head are also present on the projection of that head. Thus an auxiliary phrase can value an unvalued feature of a verb it c-commands. This, I argue, is exactly what happens in the parasitic participle case in (11a).

To lay out the account of (11) and (12), I will start with the structure of the infinitival version of (11a). As shown in (13), this structure involves the regular selectional line up of verbs. The lower modal phrase headed by *can* (②) combines with the selecting modal *would* (①), which values the selected modal as an infinitive, exactly as in the standard case of selection and valuation. The 4-3-2 word order of (11a) can then again be the result of PF linearization, and the high position of *would* is due to verb second movement.



The diagram in (14a) gives the relevant part of the parasitic participle derivation. The crucial difference is that verb cluster movement applies *before* the highest modal *would* (①) is merged. As shown in (14a), the auxiliary phrase moves and re-merges with the projection of the modal *can*. At this point in the derivation, the modal *can* is now asymmetrically c-commanded by the auxiliary phrase, which is marked with an *iT*: perf (by virtue of having a head marked with that feature). Thus, after movement of the auxiliary phrase, the modal *can* is valued as a participle by the perfect feature of the auxiliary phrase. The crucial part of this derivation is that verb cluster movement must occur before the highest modal is merged. If the modal *would* (①) is merged with the projection of *can* first, as in (14b), verb cluster movement can only target the top of the verb cluster (following the common assumption that Merge, whether internal or external, must extend the tree). In this position, however, the auxiliary phrase could not value the modal *can* as a participle, since the higher modal *would*, is a closer valuator, and hence Agree between the auxiliary phrase and modal ② would be blocked by the intervening modal ①. The only successful output of (14b) is a structure in which *can* is valued by the modal *would*, which, like (13), results in the infinitival construction.



The locality restriction arising in (14b), I suggest, is the reason for the verb second restriction in (12a). Somewhat simplified, I propose that verb cluster movement to the middle of a verb cluster is impossible in Frisian. Thus movement as in (14a) is only possible when the verb cluster is ‘complete’.⁵ If there is a higher verb, the derivation in (14a) is only possible when the higher verb is not part of the verb cluster, which is the case when the highest verb moves to verb second position. If all verbs are part of the verb cluster, as in the case of embedded clauses, movement must target the highest position, that is the top of the structure in (13). In this case, however, only the infinitival version of (11a) will be derived, which, as shown in (12b), can occur as a clause final verb cluster. Similarly, no syntactic movement is required to license parasitic participles in downward parasitic participles constructions such as (12c) (see the previous section), hence no locality issue arises for Agree, and hence clause final verb clusters are possible. Lastly, this analysis correctly predicts that “upward” parasitic participle constructions are only possible in head-final languages and not in the head-initial Scandinavian languages. Given the claim that head-final structures can be derived via PF linearization or syntactic movement, head-final languages can involve syntactic movement, which provides the prerequisite for “upward” parasitic licensing. To derive “upward” parasitic participles as in (11), syntactic movement is necessary to create the appropriate Agree configuration for valuation. Head-initial languages do not involve syntactic movement, and hence the hierarchical structure in (14a) cannot be derived, thereby excluding “upward” parasitic participles in these languages.

The account provided here also has broader theoretical consequences. First, it provides new evidence for the claim that morphological properties are, to a significant part, determined by the syntactic configuration, rather than simply by selection. Second, the fact that the morphological form is dependent on a *derived* syntactic configuration (subject to locality restrictions), and not simply determined by selectional properties provides indirect support for a model in which syntax feeds into morphology (rather than vice versa). Lastly, the analysis provides support for the claim that the syntactic licensing configuration which enables valuation is invariable within and across languages: the higher element licenses the lower element under Reverse Agree (closest c-command).

To conclude, I have argued that there is no upward licensing, neither in downward nor in upward parasitic participle constructions. Rather, the c-

5 Frisian is a strictly head-final language, which, in contrast to German, does not allow mixed orders such as 3-1-2 or 1-3-2. Although it is still an open question why languages differ regarding the possible and impossible orders in verb clusters and how these differences are encoded in the grammar, it is a fact that mixed orders are excluded in Frisian, and hence movement to the middle of the cluster is prohibited (in contrast to German; see below).

command relation between the auxiliary and the higher verb (ending up as a participle) is reversed due to movement of the auxiliary phrase. Crucially, this movement comes with its own restrictions and is only possible in languages that allow inverted (head-final) word orders, which can be derived via syntactic movement.

3.2. German – A snapshot of the “Skandal” construction

German also allows a parasitic participle construction, which is illustrated in (15a)⁶ (see Merkes 1895, Reis 1979, Meurers 2000, Vogel 2009, Haider 2011).⁷ In contrast to Frisian and Scandinavian, German parasitic participles are more restricted (Vogel 2009). First, parasitic participles are impossible when the participle occurs with an overt DP subject. The infinitival construction in (15a) where the participle has no or a PRO subject contrasts with the finite context in (15b) where an overt DP subject is present ((15b) would be grammatical with an infinitive instead of the participle). This restriction clearly differentiates German parasitic participles from the Frisian and Scandinavian analogues (cf. (3a,c)).

- (15) a. *ohne es **verhindert** haben zu können* “Skandal”
 without it **prevent.PART** have.INF to can.IPP
 ‘without having been able to prevent it’ [Vogel 2009]

6 Vogel (2009) dubbed this construction *Skandalkonstruktion* ‘scandal construction’, since every verbal element appears in an unexpected form. The semantic structure is AUX-MOD-V, however, the infinitival marker appears on the modal (the middle element), the modal appears as an infinitive (the *infinitivus pro participio* – IPP), and the main verb appears as a (parasitic) participle. In this paper, I will concentrate on the parasitic participle and ignore the IPP and the position of the infinitival marker. See Wurmbrand (2010) for a detailed account of the other aspects of this construction.

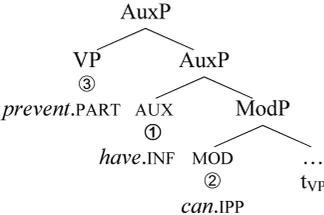
7 Vogel (2009) conducted several experiments testing the acceptability of this construction, all of which lead to the same conclusion: the *Skandal* construction is more frequent than corresponding regular infinitival construction. Writing off this construction as a non-standard, marginal phenomenon, or a repair strategy used to deal with the lack of explicit grammatical rules (Reis 1979; see Vogel 2009 for an extensive criticism of this approach) is hence not appropriate. Similarly Haider (2011) proposes that the *Skandal* construction is not a regular grammatical structure in German, but only accepted because of certain processing issues. I cannot discuss this approach here in detail, but only wish to point out that the structural approach presented here has the advantage that it unifies a range of cross-linguistically similar constructions and provides a coherent theoretical framework for the similarities and differences among these constructions found across languages.

- b. **weil er es nicht **verhindert** hat können*
 since he it not **prevent.PART** has can.IPP
 ‘since he has not been able to prevent it’

Second, while non-parasitic infinitival constructions can also occur in the 1-3-2 order as shown in (16a) (note that the semantic order is *have* » *can*), parasitic participles are not possible in this order (see (16b)), but only in the 3-1-2 order (15a).

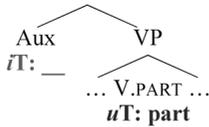
- (16) a. *ohne es haben verhindern zu können* 1-3-2
 without it have.INF prevent.INF to can.IPP
 ‘without having been able to prevent it’
- b. **ohne es haben **verhindert** zu können* *Skandal 1-3-2
 without it have.INF **prevent.PART** to can.IPP

The second property provides an important clue about the difference between the German parasitic participle construction and the Frisian/Scandinavian ones. As discussed in section 1, (2e), the 3-1-2 order cannot be derived by PF linearization alone, but must involve some step of syntactic movement (see also Abels 2011). The *Skandal* construction is thus only possible in contexts that *require* syntactic movement. The basic structure is given in (17). Given the system of Reverse Agree outlined so far the question that arises is how movement creating the 3-1-2 order could be tied to the licensing of parasitic participles.

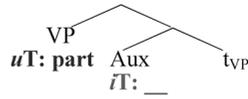
- (17)  = (15a)

The answer I provide is that the dependency relation between an auxiliary and a participle is reversed in German (and, as I will argue in the next section, in certain other Germanic languages as well). Before providing motivation for this assumption, let me lay out how this accounts for the properties of the German parasitic participle construction. If, as shown in (18a), in certain languages the participle is valued, but the auxiliary is unvalued, Reverse Agree will entail movement of the participle (phrase) above the auxiliary, as in (18b) to value the unvalued (but still interpretable; see Pesetsky and Torrego 2007) T-feature of the auxiliary.

(18) a.

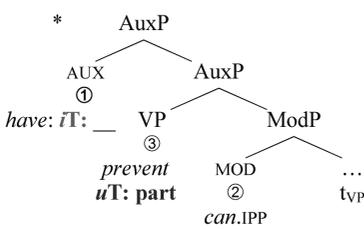


b.



This immediately explains why the 1-3-2 order is impossible with a participial “3” and an auxiliary “1” – the participle would be too low to license the auxiliary. This is shown in (19).

(19)

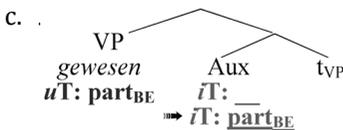


=(16b)

The feature assignment in (18) together with the Agree approach proposed here also explains straightforwardly another property of the *Skandal* construction, namely the fact that the parasitic participle, like any other participle, has an effect on the choice of auxiliary. I do not provide a detailed technical account of auxiliary selection here, but simply assume that certain verbs require either a *be* or *have* auxiliary. Any theoretical implementation of auxiliary selection will yield the right result for the cases relevant to the issue here. For instance, in (20a), the participle of the verb *be*, *gewesen*, can only value the auxiliary as a *be* auxiliary, and not as a *have* auxiliary (cf, (20b)). The configuration yielding this distribution is illustrated in (20c).

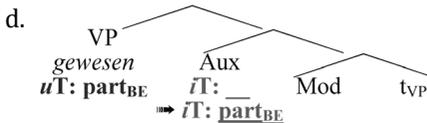
(20) a. *dass Hans dabei gewesen ist*
 that John present been is
 ‘that John has been present’

b. **dass Hans dabei gewesen hat*
 that John present been has



Exactly the same effect is predicted to be found in the *Skandal* construction under the current analysis. As shown in (21a), modals require a *have* auxiliary.⁸ However, in the *Skandal* construction, the structure is as in (21d) – that is a configuration in which the main verb participle is the element licensing and valuing the auxiliary, and hence the main verb determines the type of auxiliary. In other words, the crucial difference between (21a) and (21b,c) is that the verb responsible for auxiliary selection is the modal in (21a), whereas it is the main verb participle *gewesen* in (21b,c). Therefore, only the auxiliary *be* is possible (see (21c), and *have* is excluded. (21b) is thus ruled out in exactly the same way as (20b).⁹

- (21) a. *dass niemand dabei sein hat / *ist dürfen*
 that nobody present be has / *is may.IPP
 ‘that nobody was allowed to be present’
- b. **Es war großartig dabei gewesen haben zu dürfen*
 It was great present been have to may.IPP
 ‘It was great having been allowed to be present’
- c. *Es war großartig dabei gewesen sein zu dürfen*¹⁰
 It was great present been be to may.IPP
 ‘It was great having been allowed to be present’



Lastly, this account, supplemented with two assumptions, also gives us a way to implement the no-subject restriction in (15b). The first assumption I adopt is *Anti-locality* (Abels 2003), which states that movement of *vP* is impossible if that *vP* is the complement of a phase head (*v*). The second assumption (argued

8 The structure of this example is more complex, since the modal must occur in the IPP, which requires a different derivation (see Wurmbrand 2010). The crucial fact, however, still holds: modals can only occur with the *have* auxiliary.

9 Haider (2011: 253) cites examples such as (21b) as problematic for an Agree view, however, exactly the opposite is the case, as shown in the text. There are, however, interesting questions raised by mismatches in auxiliary choice between the modal and the main verb, which can only be addressed after the structure of the IPP construction is established, which I am not able to do in this paper.

10 This is a corpus example. “dabei gewesen sein zu dürfen”, “gewesen sein zu können” are constructions that occur very frequently in Google searches.

for in detail in Wurmbrand 2010, 2011) is that *v* combining with a PRO or no subject is not a phase head. The motivation for this claim is that *v* must get phi-features valued by the subject. PRO (as well as anaphors), however, is not valued for phi-features, which makes it dependent on a higher antecedent. The phi-deficiency if *v*, I argue is the reason why phase-hood is postponed in case of PRO, but not in case of full DPS.

A VP that is part of a PRO vP (or no vP) is hence not subject to *Anti-locality*. Putting these assumptions together then accounts for the difference between (15a) and (15b): (15a) is possible since the participial VP is not the complement of a phase head, and therefore movement of the VP above the auxiliary is possible, which correctly values the auxiliary. In (15b), on the other hand, the participial VP is the complement of a phase head, and it is hence frozen. Since it cannot move, the auxiliary ends up unvalued which cancels the derivation.

Crucially, no such restriction holds in Scandinavian or Frisian, which shows that VP-movement cannot be involved in these constructions, or in other words, movement is not necessary to establish the dependency leading to parasitic participles in Scandinavian and Frisian parasitic participles of type #1. Furthermore, although I have suggested that languages differ regarding which element is valued (and I will offer a way to predict this property in the next section), the syntactic configuration enabling valuation – Reverse Agree – is again invariable across languages.

4. Which way do dependencies go?

In this final section, I offer an account of the distribution of valued participle features. Reverse Agree differs crucially from Standard Agree, in that valuation is downward in the former, whereas it is upward in the latter. This is summarized in (22).

- (22) a. “Standard” Agree b. Reverse Agree
-
- Diagram (a) shows a tree with a T node at the top left and a V node at the bottom right. The T node has a feature *i*T: __. The V node has a feature *u*T: val. A line connects the T node to the V node, representing the dependency.
- Diagram (b) shows a tree with a T node at the top left and a V node at the bottom right. The T node has a feature *i*T: val. The V node has a feature *u*T: __. A line connects the T node to the V node, representing the dependency.

The question then is how one knows which element is valued. Pesetsky and Torrego (2007: p. 277) suggest one “[...] reason for assuming that the T-feature of Tns is unvalued, though interpretable: the fact that Tns appears to learn its value in finite clauses from the finite verb.” This however begs the question of why T learns the value from the verb and not the verb from T. One domain where upward valuation appears to be problematic is in VP-ellipsis contexts in English. It is well-known that VP-ellipsis does not always require strict iden-

tity between the antecedent and elided vPs (among others Quirk et al. 1972, reported by Sag 1976, Warner 1986, Lasnik 1995, Merchant 2008, to appear; all data are from Lasnik 1995).¹¹

- (23) a. *John slept, and Mary will too.* (39)
 b. *John sleeps (every afternoon), and Mary should too.* (41)
 c. *John was sleeping, and now Mary will.* (68)
 d. *John has slept, and Mary will too.* (45)

Lasnik (1995) points out that, assuming identity between the two vPs is necessary, it is hard to see how a lexicalist approach can handle these facts, as this would lead to impossible combinations, such as **John* [_{VP} *slept*._{3SG.PAST}] ... *Mary will* [_{VP} *slept*._{3SG.PAST}]. The same issue arises for the standard Agree approach, under which, for T to Agree with v/V, T must be deficient. In (24), I spell out the distribution of features as proposed in Pesetsky and Torrego (2007) and compare them to a Reverse Agree approach. As shown in (24a), if verbs are inserted valued and transmit their value upwards, the antecedent and elided vPs would not be identical. However, under a downward valuation approach as in (24b), the two vPs start out identical, since verbs come unvalued and receive their value via Reverse Agree. Ellipsis can hence target the vPs before Agree takes place.¹²

(24) *John was sleeping, and now Mary will sleep.*

a. ...	T/Asp » iT: __ »	V [sleeping] uT: prog	Standard Agree
... ...	T/MOD » iT: __ »	V [sleep] uT: fut	Antecedent ≠ Elided VP

11 I can only provide a short summary of the main issue here. As shown in Lasnik (1995), Potsdam (1997), Merchant (2008, 2009), among many others, featural mismatches are not always possible, but are dependent on the syntactic configuration. Thus, an account that assumes that feature identity is not a requirement of ellipsis, would incorrectly allow mismatches in all contexts. In Wurmbrand (2012), I develop an account of ellipsis which is based on the assumption that featural identity is required in ellipsis. The account crucially relies on Reverse Agree and derives the possible and impossible mismatches.

12 A similar argument can be made by vP-topicalization cases of the form: *We had to stand firm, and stand firm we have!* (Bresnan 1991; thanks to Marcel den Dikken, Richard Kayne, and Bob Frank for pointing these out to me). Given that there is no participle in the lower clause, these constructions (similarly to the Germanic IPP construction) raise the questions of how the auxiliary could learn the perfect/participle value.

- b. ... T/Asp »
 iT: prog »
- ... T/MOD »
 iT: fut »

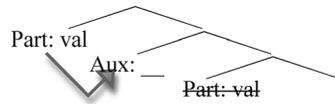
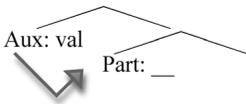


Reverse Agree

Antecedent = Elided VP

Returning to auxiliary-participle constructions, my main claim is that languages differ regarding which element is inserted valued. Frisian, Scandinavian, and English have been assumed to have the initial feature specification in (25a), whereas German has the specification in (25b), which triggers movement of the participle above the auxiliary.¹³ The question then is if/how one can predict whether a language is of type #1 or type #2.

- (25) a. Type #1: no movement necessary b. Type #2: movement required



The answer I suggest is that the distribution of features depends on the lexical inventory of the elements involved. German participles are circumpositional – they are composed of a prefix *ge-* and a participial ending *-en/-t*. I propose that the participial prefix (specifically, the head corresponding to the prefix *ge-*) is *lexically valued* as a participle, or more specifically as a perfect.¹⁴

13 The typology in (25) is based on the assumption that one of the two elements is unvalued (following Brody 1997 and Pesetsky and Torrego 2007 who posit the *Thesis of Radical Interpretability*), which guarantees an Agree dependency between the auxiliary and the participle. In Wurmbrand (2011a)), I propose to dispense with the *Thesis of Radical Interpretability* and that *uninterpretable valued* features can also be licensed via Merge. In that system, a third option exists, where both the auxiliary and the participle are inserted valued. I cannot go into details of this system in the current paper, and therefore restrict my discussion to the two options in (25).

14 Marcel den Dikken points out that the assumption that *ge-* is lexically valued as participle is problematic in light of different uses of the *ge-* prefix: root nominalizations such as *Geschrei* ‘shouting’, collectivization such as *Gebrüder*, *Geschwister* ‘siblings’, and several verbs that are lexically associated with *ge-* such as *geschehen* ‘happen’. Similar words exist in Dutch. I have not systematically investigated these cases, but it seems fairly clear that the latter two usages are not productive and it is not obvious if or what the meaning contribution of *ge-* in these cases is (at least not synchronically). As for the first case, it seems to me that the assumption that *ge-* contributes aspect to these nominalizations is warranted by the meaning. Similar suggestions have been made by Zwart (2007). Thus, the lexical value of *ge-* should be seen as aspect rather than simple ‘participle’.

Looking at the word order options in auxiliary-participle constructions across Germanic, an interesting generalization emerges. As summarized in Wurmbrand (2004b, 2006b), in all languages with prefixal participles, the order PART (2) – AUX (1) is possible, noteworthy even in languages where the typical order otherwise is the head-initial 1-2 order. For instance, in Afrikaans, modal-infinitive constructions must appear in the 1-2 order; however, auxiliary-participle constructions can only occur in the 2-1 order. The distribution below follows if the licensing relation is reversed in *ge*-languages: participles license Aux, which entails movement of the participle and the Agree/valuation view proposed here, resulting in the head-final order.

<i>Language</i>	<i>ge-</i>	<i>Aux-Part</i>	<i>MOD-INF</i>	
Afrikaans	yes	2-1	1-2	See Wurmbrand (2004b, 2006b) and references therein for certain exceptions and variation.
West Flemish	yes	2-1	1-2	
Dutch	yes	2-1, 1-2	1-2, 2-1*	
Standard German	yes	2-1	2-1	
Swiss	yes	2-1, %1-2	2-1, 1-2	
Frisian	no	2-1	2-1	Head-final PF linearization
Scandinavian	no	1-2	1-2	
Hypothesized impossible	yes	1-2; *2-1		
Hypothesized impossible?	no	2-1; *1-2	1-2	

* The order 2-1 for modal-infinitive constructions is often not given in the literature, but it is shown in Barbiere et al. (2008, map 15b) that this order occurs in 113 locations in The Netherlands. I thank a reviewer for pointing this out to me.

The only part of the distribution that does not immediately follow from the reverse feature specification in languages with prefixal participles are the languages that allow both the 2-1 and the 1-2 order. I offer two possible paths one can take to accommodate the optionality. One way to account for the possibility of both orders is, as mentioned in fn. 12, to allow auxiliaries to be inserted valued or unvalued in languages where the participle is lexically valued. If the auxiliary is inserted unvalued, movement will take place, yielding the 2-1 order; if the auxiliary is inserted valued, no movement will take place, yielding the 1-2 order. The second option is to allow pronunciation of the lower copy of the moved participle in certain cases. This would be motivated for West Flemish. As noted in Haegeman (1995:53) and Haegeman (1998:294), the 1-2 order is possible only if the participle is followed by an extraposed PP or CP. If movement takes place obligatorily in *ge*-languages, typically the higher copy would be pronounced at PF, unless certain prosodic factors warrant pronun-

ciation of the lower copy. Pronunciation of the lower copy of the verb could, for instance, be motivated by allowing a prosodic grouping of the lower verb together with the peripheral PP/CP, which could not be achieved when the higher copy is pronounced. At this point, I leave the choice between these approaches open.

5. Conclusion

To conclude this paper, I will summarize the mini-typology of parasitic participle constructions I have provided in this paper. The full picture is given in the table below. A precondition for licensing parasitic participles is that the language must allow constructions of the form AUX-MOD-V. Since these constructions are independently excluded in English (English modals can never be embedded), parasitic participles are not found in English.

	<i>Scandinavian</i>	<i>Frisian</i>	<i>German</i>	<i>English</i>
Embedded modals	Yes	Yes	Yes	No (*has could read)
ge-aux values part	No	No	Yes	
Restrictions	Type #1	Type #1	*Type #1	*Type #1
Movement possible	No	Yes	Yes	
	*Type #2	Type #2 (upward)	Type #2 (Skandal)	*Type #2
Restrictions		Movement Locality		

The main properties that derive the different types of parasitic participle constructions are: i) the presence vs. absence of prefixal participles, and ii) whether a language allows movement in verb clusters. The first property determines which element (auxiliary or participle) is inserted with the valued feature. Only languages without prefixal participles allow parasitic participles of Type #1 (the main downward construction). The main restriction of this construction is whether the infinitive allows restructuring (i.e., the omission of the infinitival head carrying an *i*T feature which would value the embedded verb as an infinitive). The second property determines whether “upward” parasitic constructions are possible in non-prefixal languages, and whether parasitic participles are possible in prefixal languages. To allow a parasitic participle in a prefixal language, movement resulting in the 3-1-2 order must be independently possible. Since Dutch only allows 1-2-3 orders in the AUX-MOD-V construction, the lack of movement creating the 3-1-2 order could be

seen as the reason for why (Standard) Dutch, in contrast to German, does not allow the *Skandal* construction.

The analysis proposed in this paper has several theoretical consequences. First, assuming Reverse Agree, a uniform syntactic licensing can be assumed, which covers not only the distribution of parasitic morphology in Germanic, but also has advantages regarding the properties of VP-ellipsis, and as I argue in Wurmbrand (2011a, 2012), it unites syntactic dependency relations involved in Case assignment, control, anaphor binding, polarity licensing, negative concord and many more. Second, I have shown that the syntactic configuration (in particular derived syntactic configurations) feed into the morphology, which has consequences for the way syntax and morphology interact. Lastly, the analysis provides further evidence (see Pesetsky and Torrego 2007, Bošković, to appear) for separating the notion of interpretability (iF/uF) from the notion of valuation, for Agree being valuation-driven, and for XPs being allowed to act as valuators.

Regarding verb cluster reordering, I have proposed that both syntactic movement and PF linearization could be involved in deriving the output orders. While this may seem an unnecessary burden at first, I have tried to show that the two mechanisms are necessary to distinguish between the different syntactic properties and locality conditions found in constructions I claim to involve syntactic movement vs. the ones that can be derived by simple PF linearization.

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