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Leiden
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Life of Phi: Phi-features in West Germanic and the syntax-morphology interface

Alem, A.H.J. van

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CHAPTER 5

Summary and conclusion

In this thesis, I investigated various aspects of ϕ -features, by studying microvariation in non-standard and minority West Germanic languages. The goal was to gain insight into the nature and locus of linguistic variation at the syntax-morphology interface.

In **Chapter 2**, I investigated variation in agreement in Dutch dialects, with a focus on position dependent agreement (PDA): agreement that varies depending on the word order of the subject and the verb. A sentence illustrating PDA is given in (1). In the first clause of this example, the subject precedes the verb (subject-verb or SV word order), and the verb inflects with *-t*. In the second clause, the subject follows the verb (verb-subject or VS word order), and here the verb does not show overt inflection. The question that I set out to answer in Chapter 2 is how to derive this agreement alternation, and how we can explain variation in PDA in Dutch dialects.

- (1) Als je gezond **leef-t**, **leef-Ø** je langer.
if you healthy live-AGR, live-Ø you longer
'If you live healthy, you will live longer.' Standard Dutch

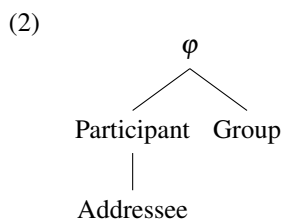
Using data from the DynaSAND (Barbiers et al., 2006), I looked at over 200 verbal paradigms of Dutch dialects. Although there is a lot of variation between dialects, I showed that the major patterns can be captured by only six paradigms, five of which have PDA, and one does not. Furthermore, I showed that these paradigms all make use of the same affix inventory.

I then proposed a new analysis of PDA, that captures the five different PDA paradigms in a uniform way. Following Zwart (1997), I assumed that the verb in SV word order is in T, and that the verb in VS word order is in C. Both T and C are agreement Probes that Agree with the subject (in Spec,TP). My proposal is that the varying

agreement in T and C is the result of different agreement features in T and C: while T can copy all features of the subject under Agree, C is ‘defective’ and is unable to copy certain features of the subject to C.

To illustrate the analysis, consider again example (1). The agreement suffix used in the SV word order (*-t*) is also used in other contexts, and is the elsewhere suffix. The \emptyset ending used in the VS word order is only also used with first person singular, and I therefore argued that it is a uniquely specified first person singular suffix. In (1), the subject is a second person singular pronoun. When T Agrees with the subject (SV word order), it copies the whole set of features that make up second person singular. The suffix that matches this set of features is the elsewhere suffix *-t*, which will be inserted in T. When C Agrees with the subject (VS order order), it can only copy a subset of features from the second person singular subject. I assumed that the second person singular consists of three features: [+ Participant], [+ Addressee], [– Group]. In standard Dutch, the defective Probe C cannot copy [+ Addressee]. The features that are copied to C are [+ Participant] and [– Group]. This matches the specification of first person singular. Therefore, the \emptyset suffix will be inserted in the VS word order. This results in position dependent agreement: in the SV word order, the verb spells out full agreement, with the suffix *-t*. In the VS word order, the verb spells out defective agreement, with the \emptyset suffix.

To derive the five PDA paradigms, I demonstrated that we need three different types of defective C Probes, that differ in which ϕ -features they are unable to copy. I argued that this distribution of defective C Probes follows if features are organised in a ϕ -feature geometry (2) (cf. Harley and Ritter, 2002). The feature geometry expresses dependency relations between features. For instance, the feature [Addressee] is a dependent of the feature [Participant]. For the C Probe, this means that the feature [Addressee] can only be copied to the Probe if [Participant] is also copied. The feature geometry therefore imposes restrictions on possible defective Probes, capturing exactly which defective Probes are attested in Dutch dialects, and which are not.



Then, I looked in more detail at the representation of ϕ -features: are ϕ -features privative, univalent elements, that are either present or absent? Or are ϕ -features binary elements that have a + or a – value? This question addresses a foundational property of ϕ -features. I showed that in the PDA paradigms, there is evidence for both types of representations. In order to account for common and regular patterns of syncretism in PDA paradigms, reference to both the + and – values of features is necessary. This supports the idea that features are binary. However, the + and – values of ϕ -features do not behave equally. There is a direct relation between having a (contrastive) + value of a feature in the affix inventory, and presence of that feature

on the C Probe. No such relation is observed between a – value and the C Probe. This observation is best captured with privative φ -features, because the distinction between presence (or +) and absence (or –) is inherent to the privative representation of features. I showed that in the literature on φ -features, arguments in favour of privative φ -features are based on syntactic phenomena, whereas arguments in favour of binary φ -features are based on phenomena in morphology. Based on this, and the evidence from the PDA paradigms, I concluded that the representation of φ -features is not uniform in syntax and morphology. In syntax, φ -features are privative, but in morphology, φ -features are binary. The evidence for privative and binary features based on the Dutch PDA paradigms can now be easily understood. The C Probe plays a role in syntax, and can therefore encode the inherently unequal distinction between presence and absence of φ -features using privative features. Patterns of syncretism, on the other hand, are derived in morphology, and can thus make use of both the + and – values of the binary representation of φ -features.

In the remainder of the chapter, I demonstrated how the analysis of PDA based on defective Probes can be extended to account for PDA in standard Arabic. I also showed that the defective Probe analysis is more successful in capturing the different paradigms with PDA than previous morphological and syntactic approaches.

The wider theoretical implications of Chapter 2 are as follows. First, I presented a novel argument that φ -features are organised in a feature geometry, based on an entirely new empirical domain: microvariation in position dependent agreement in Dutch dialects. Based on my analysis of PDA in terms of defective C Probes, I showed that the feature geometry of φ -features captures all and exactly those defective Probes attested in Dutch dialects. The idea that φ -features are organised in a geometry is not new: Harley and Ritter (2002) also argue for a φ -feature geometry, based on a completely different set of data: the inventory of pronouns in a large, typologically diverse set of languages. The convergence of my and Harley and Ritter (2002)'s results shows that the φ -feature geometry has wide-ranging effects in the grammar, from pronouns to agreement, on a micro- and macrocomparative scale.

Second, I proposed that the representation of φ -features is different in syntax and morphology. I argued that in syntax, φ -features are privative, but that they are binary in morphology. This is a radical proposal, but not without precedent (see Preminger, 2017, and Kučerová, 2019 on the syntax-semantic interface). If correct, it opens up a whole range of possibilities for future research. On the empirical side, φ -feature valence can be used to diagnose if a phenomenon is syntactic or morphological in nature. On the theoretical side, the proposal has the potential to explain differences between φ -features and other types of features, such as case features. For instance, in the domain of case, there are strong restrictions on the sort of syncretisms that are attested cross-linguistically (see e.g. Caha, 2009). In the domain of φ -features, there are no such restrictions (Cysouw, 2011). The difference can be explained if for φ -features, we have access to a binary representation, whereas case features are only privative.

In **Chapter 3**, I looked at complementiser agreement (CA), with a focus on intervention effects in Frisian and Limburgian. An example of CA in Frisian is given in (3). In this example, the complementiser *dat* ('that') agrees with the subject of the

embedded clause.

- (3) Jan sei dat-st do fegetarysk ytst.
 Jan said that-2SG you vegetarian eat.2SG
 ‘Jan said that you eat vegetarian.’ Frisian

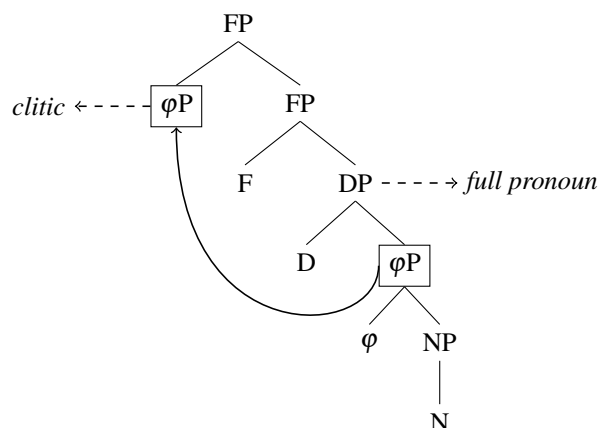
When an element, typically a focus particle, linearly intervenes between the complementiser and the subject, CA is often disrupted. In Frisian, intervention of this kind leads to ungrammaticality, see (4). In Limburgian, intervention leads to a shift of CA from the complementiser to the intervener, illustrated in (5). In Chapter 3, I analysed these intervention effects, with the goal of gaining insight into the nature of CA.

- (4) *Jan sei dat-st ek do fegetarysk ytst.
 Jan said that-2SG also you vegetarian eat.2SG
 ‘Jan said that you, too, eat vegetarian.’ Frisian
- (5) Jan zeï dat auch-s tich waal ens vegetarisich uts.
 Jan said that also-2SG you sometimes vegetarian eat.2SG
 ‘Jan said that you, too, sometimes eat vegetarian.’ Limburgian

I started by looking at the properties of the CA morpheme in detail. Morphologically and syntactically, the CA morpheme shows different behaviour from other agreement morphemes in Frisian and Limburgian. The first special property of the CA morpheme is that it can attach to a variety of elements; apart from complementisers and verbs, it can also attach to, for example, *wh*-phrases and focus particles. The next property is that the CA morpheme is insensitive to alternations of the (verbal) stem it attaches to. This can be seen in two contexts. First, in contrast to many other agreement morphemes in Dutch and Frisian dialects, the CA morpheme does not show tense allomorphy; the form of the CA morpheme is always the same, regardless of the tense of the verbal stem. Second, when a verbal stem is unlauding in Limburgian, the CA morpheme is never dropped, in contrast to the third person singular agreement morpheme. Another property of the CA morpheme in Frisian and Limburgian is that it is a unique, non-syncretic morpheme. The final special property of the CA morpheme is that it can appear without an independent pronoun in Frisian, giving rise to apparent *pro*-drop. These properties of the CA morpheme all point to the conclusion that the CA morpheme is not an affix, but a clitic. I therefore concluded that in Frisian and Limburgian, CA is not agreement, but the result of subject clitic doubling.

The conclusion that CA is clitic doubling formed the starting point for the analysis of the intervention effects on CA in Frisian and Limburgian. I adopted the analysis of clitic doubling by van Craenenbroeck and van Koppen (2008). According to this analysis, a clitic is structurally contained in a full pronoun (cf. Déchaine & Wiltschko, 2002). Clitic doubling is the result of copying of the clitic substructure, followed by movement of the copy to a higher position, where it is realised. The analysis is illustrated in (6). In this structure, the full pronoun is the DP, and the clitic is the \emptyset P, that moves to Spec,FP. Both the clitic and the full pronoun are then spelled out.

(6)

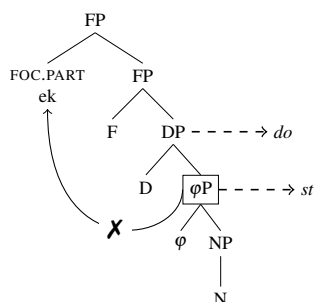


I assumed that movement of the clitic is restricted by two factors: the Subject Condition (Chomsky, 1973) and anti-locality (Abels, 2003). The Subject Condition blocks movement of the clitic out of the subject (the FP in (6)). Anti-locality forces the clitic to skip at least one maximal projection when it moves (DP in (6)). As a result, the only possible landing site for the φ P clitic in (6) is Spec,FP, as indicated.

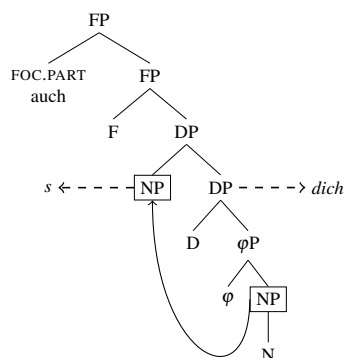
For Frisian, I showed that the clitic is a φ P. In a Frisian sentence with CA, the φ P part of the subject undergoes doubling and movement to Spec,FP (as in (6)), where it is spelled out. This leads to CA. I argued that a focus particle that intervenes between the complementiser and the subject sits in Spec,FP. In a sentence with CA and an intervening focus particle, movement of the φ P clitic to Spec,FP is therefore blocked. There is also no other position that the clitic can move to. The clitic cannot move out of the FP because of the Subject Condition. It also cannot move to Spec,DP, because this would violate anti-locality. Because the clitic is created, but cannot move, the structure crashes, illustrated in (7). This results in the ungrammaticality of intervention between a complementiser and a second person singular subject in Frisian.

In Limburgian, the CA clitic is not a φ P, but a NP. In a Limburgian sentence with CA, the clitic NP can move to Spec,FP to be spelled out there, leading to CA. When a focus particle intervenes between the complementiser and the subject, Spec,FP is filled by it. Therefore, the clitic cannot move to Spec,FP anymore. However, because the Limburgian CA clitic is structurally smaller than the Frisian CA clitic, the Limburgian CA clitic can move to Spec,DP instead, without violating anti-locality. This is illustrated in (8). When the structure is realised, the clitic will be spelled out in between the focus particle and the full subject pronoun, leading to the observed shift of the CA morpheme when a focus particle intervenes between the complementiser and the subject in Limburgian.

(7)



(8)



In short, the clitic doubling analysis of CA accounts for the intervention effects on CA in Frisian and Limburgian. In the chapter, I additionally show that previous analyses of CA, that take CA to be agreement or the result of a PF operation, do not account for the observed intervention effects. Furthermore, I demonstrate that the clitic analysis offers insight into other contexts with CA, such as CA in subject relatives, and CA with extracted subjects.

The first implication of the analysis concerns the clitic doubling operation. In Frisian, intervention between the complementiser and the subject is ungrammatical, because the CA clitic is created, but unable to move. This shows that doubling or creation of the clitic, and movement of the clitic are separate steps. In other words, clitic doubling is a two-step operation. Both steps can fail, and this leads to different grammatical outcomes. Failure of doubling is discussed by Preminger (2014), and leads to a grammatical structure, but without clitic doubling. Failure of movement is what happens in Frisian, and leads to ungrammaticality.

The second implication is empirical, and relates to the typology of partial *pro*-drop languages. Partial *pro*-drop languages often show a participant-based split regarding the pronouns that can be dropped; for instance, in Hebrew, only first and second person pronouns can be dropped (Vainikka & Levy, 1999). West Germanic languages with CA are among the very few examples that show a different pattern: in these languages, only the subjects that trigger CA, or have other clitic-like properties, can undergo *pro*-drop. For instance, in Frisian, only a second person subject triggers CA and can be dropped. The analysis of CA as clitic doubling calls for a reinterpretation of partial *pro*-drop in West Germanic. Rather than an example of a unique type of partial *pro*-drop, we are dealing with a case where the pronoun is realised as a clitic. Because the West Germanic examples of partial *pro*-drop can be reanalysed this way, the typology of partial *pro*-drop should be restricted to only participant-based splits.

In **Chapter 4**, I investigated verb-first (V1) and verb-second (V2) word order in imperatives in standard Dutch, Dutch dialects, and standard German. Imperatives in these language varieties are typically V1, as illustrated for standard Dutch in (9). In eastern Dutch dialects and German, imperatives can also have a V2 word order. Examples are given in (10) and (11). Between the eastern Dutch dialects and German,

there is a further contrast: in eastern Dutch dialects, only distal demonstratives and adverbs, such as *dat* ‘that’ or *dan* ‘then’, can be the first element in an imperative. In German, there is no such restriction (Barbiers, 2013).

- (9) Lees dat boek maar niet!
read.IMP that book PTCL not
‘Don’t read that book!’

Standard Dutch

- (10) Da lees maar nie!
that read.IMP PTCL not
‘Don’t read that!’

Eastern Dutch dialects (Barbiers, 2013, p. 5)

- (11) Das Buch lies mal nicht!
that book read PRTC not
‘Don’t read that book!’

Standard German (Barbiers, 2013, p. 5)

It is surprising that V2 imperatives are grammatical in eastern Dutch dialects and German. Continental West Germanic languages are V2 languages, meaning that exactly one constituent can precede the main verb in matrix clauses. In imperatives, the first constituent is assumed to be an empty imperative operator (Bennis, 2007; Zanuttini, 2008). It should therefore not be possible to also have an overt constituent to the left of the main verb. The aim of Chapter 4 was to explain the variation in word order in imperatives in Dutch, Dutch dialects, and German.

Using data from the DynaSAND and GTRP, I demonstrated that in Dutch dialects, there is a correlation between allowing V2 imperatives, and umlaut in the present indicative verbal paradigm. An example of verbal umlaut is given in (12). In this example, the second and third person singular verbs are umlauting, meaning that the stem vowel of the verb is fronted. The correlation is uni-directional: if a variety allows for V2 imperatives, it also has verbal umlaut. The correlation was further supported by statistical evidence and fieldwork data. It also holds for German.

- (12) a. ik geef
I give

- b. gij gift
you give

- c. hij gift
he gives

Veghel Dutch

I then looked in more detail at the properties of verbal umlaut to identify its underlying cause. First, I showed that umlaut is not phonologically conditioned; it is not the result of a phonological rule. I then considered whether umlaut is the result of stem allomorphy. Based on the tests by Weisser (2019) and van Alem (2020), I showed that umlaut is not the result of allomorphy. The next hypothesis I considered was that umlaut is the result of Agree. I demonstrated that umlaut does not behave like other agreement morphemes, based on which I also rejected the idea that umlaut is the result of Agree. The remaining option is that umlaut is the result of lexically conditioned suppletion. I showed that this approach correctly captured the properties and distribution of verbal umlaut. Concretely, this conclusion means that the alternating stem forms are each stored in the mental lexicon. The stem forms are inserted based

on the morphosyntactic features in the syntactic structure. I argued that the features that condition insertion of the alternating stems are person features. This means that the lexical entry of the verbal stems includes a specification for person features.

In Dutch dialects and German, there are three distinct patterns of verbal umlaut. In Dutch Low Saxon dialects, only the third person singular stem is umlauting. The other verbs of the present indicative paradigm, and the imperative verb, are not umlauting. In order to capture this pattern, I argued that the umlauting form is underspecified, and that the non-umlauting form is specified as [Participant]. This means that the imperative verb is also specified for the feature [Participant]. In Groningen and Limburg Dutch, the second and third person singular stems are umlauting. The other present tense verbs and the imperative verb are not. In East Brabantic dialects of Dutch, and German, the second and third person singular verbs in the present indicative are umlauting, as is the imperative verb, which has the same form as the second person singular verb stem. To capture these patterns, I proposed that there are three stems in the mental lexicon, that are fully specified for person features. Importantly, the imperative verb in Groningen and Limburg Dutch is specified as [Participant], and the imperative verb in East Brabantic and German is specified as [Participant] and [Addressee].

The analysis of verbal umlaut is essential to the analysis of word order in imperatives. Following Zanuttini (2008) and Zanuttini et al. (2012), I assumed that the subject in imperatives needs to be licensed through Agree with second person features ([Participant] and [Addressee]). Building on the analysis of V2 imperatives by Barbiers (2013), I argued that the second person features can come from three different sources: the imperative verb; the element preceding the imperative verb; or a covert imperative operator. With this background in mind, the variation in word order in (dialectal) Dutch and German imperatives can be derived.

In standard Dutch, imperatives are always V1. Because standard Dutch does not have verbal umlaut, the imperative verb is not specified for person features. In the imperative, the features that are required to license the imperative verb therefore have to all come from the element that precedes the imperative verb. The only element that is able to provide these features is the covert imperative operator. Because the operator occupies the position preceding the imperative verb, standard Dutch imperatives will always be V1.

In the eastern Dutch dialects, V2 imperatives are allowed. Dutch Low Saxon dialects and Groningen and Limburg Dutch are varieties with verbal umlaut. The imperative verb in these varieties is specified for the feature [Participant]. It can therefore contribute half of the required features to the imperative subject; the other feature ([Addressee]) should come from the element preceding the imperative verb. In Dutch dialects, V2 imperatives are only allowed when the sentence-initial element is a distal pro-form. It has been argued that distal elements share features with second person (see e.g. Barbiers, 2013; Harbour, 2016). Based on these arguments, I proposed that distal elements are specified for the feature [Addressee]. That means that a distal element that precedes the imperative verb can contribute the remaining [Addressee] feature to the imperative subject in Dutch Low Saxon dialects and in Groningen and Limburg Dutch. The result is that V2 imperatives are allowed in these varieties, with the restriction that the element preceding the imperative verb is a distal pro-form.

East Brabantic dialects also allow for V2 imperatives, with the restriction that the initial element is distal. The imperative verb in east Brabantic is specified for the features [Participant] and [Addressee]. However, the C head in east Brabantic, where the imperative verb is spelled out, is a defective Probe (see Chapter 2): it only has a [Participant] feature, but not an [Addressee] feature. I argued that for this reason, only [Participant] on the imperative verb can Agree with the imperative subject. The feature [Addressee] needs to come from the element that precedes the imperative verb. A distal element can provide this feature. As a consequence, V2 imperatives, where the initial element is a distal pro-form, are possible in east Brabantic dialects.

Finally, in German, V2 imperatives are allowed with no restriction on the sentence-initial element. The imperative verb in German is specified for [Participant] and [Addressee]. The C head in German is not a defective Probe; both [Participant] and [Addressee] can Agree with the subject to license it. The position preceding the imperative verb is left free, and can be the landing site for movement of any constituent from inside the imperative. This results in the V2 word order. In the chapter, I also discuss two previous analyses of V2 imperatives by Koopman (2007) and Barbiers (2013), and show that my analysis overcomes the theoretical and empirical issues of those analyses.

What the analysis of V2 imperative shows is that imperatives can ‘opportunistically’ use φ -features that are present in the sentence to license the imperative subject. In West Germanic, the features that are used to license imperatives come from verbal umlaut. I argued that this is possible, based on the proposal that verbal umlaut is suppletion, and that the alternating stem forms are stored in the lexicon with a φ -feature specification. This approach to verbal umlaut accounts for its morphological properties and distribution. Moreover, φ -features on lexical items can restrict certain types of movement in the imperatives, based on whether the moved element can contribute to licensing of the subject. If the imperative subject is licensed by φ -features on lexical items, then an imperative operator is not needed. This shows that the imperative operator is not obligatory in imperatives. Rather, it seems that the imperative operator can be inserted as a last resort option. This result calls for a flexible approach to imperative licensing, in which φ -features can be used for licensing regardless of their origin.

