

# Microvariation and parameter hierarchies

Jeroen van Craenenbroeck & Marjo van Koppen

KU Leuven/CRISSP & Utrecht University/UiL-OTS

## 1 Introduction

- **CENTRAL DATA:** ten dialect phenomena in 267 dialects of Dutch
- **METHODOLOGICAL GOAL:** develop a quantitative-qualitative methodology for studying and analyzing syntactic microvariation patterns
- **EMPIRICAL GOAL:** describe and categorize variation patterns in Dutch dialects
- **THEORETICAL GOAL:** analyze the variation patterns, identify the relevant parameters (and their interactions), and establish the parameter hierarchies they are part of

### Contents

- 1 Introduction
- 2 The data: ten dialect phenomena
- 3 Statistical analysis of the aggregate data
- 4 From statistics to linguistics: interpreting the results
- 5 Parameter interactions and parameter hierarchies
- 6 Beyond Dutch: split C and split D in Afrikaans
- 7 Summary and conclusions

## 2 The data: ten dialect phenomena

### complementizer agreement (CA)

- (1) *O-n Bart en Lieske in t paradijs levn*  
if-PL Bart and Lieske in the paradise live  
'If Bart and Lieske are living in paradise, ...' (Gistel)

### clitic doubling (CD)

- (2) *da-ze zaile lachen.*  
that-they<sub>CLITIC</sub> they<sub>STRONG</sub> laugh  
'that they are laughing.' (Wambeek)

### short *do* replies (SDR)

- (3) *A: IJ zal nie komen. B: IJ doet.*  
he will not come he does  
'A: He won't come. B: Yes, he will.' (Berlare)

### negative clitic (NEG)

- (4) *K en goa nie naar schole.*  
I NEG go not to school  
'I'm not going to school.' (Tielt)

(Barbiers et al. 2006)

**clitics on *yes* and *no* (CYN)**

- (5) A: *Wilde nog koffie, Jan?* B: *Ja-k.*  
 want.you PART coffee Jan Yes-I  
 'A: Do you want some more coffee, Jan? B: Yes.'  
 (Malderen)

***t* 'it' as *there*-expletive (EXPL-T)**

- (6) *T en goa niemand nie dansn.*  
 it NEG goes no.one not dance  
 'There will be no dancing.'  
 (Brugge)

***if* as a comparative complementizer (CMPR-IF)**

- (7) *Zie peist daj eer ga thuis zijn of ik.*  
 she thinks that.you sooner go home be if I  
 'She thinks you'll be home sooner than me.'  
 (Oostkerke)

**the obligatory use of expletive *there* in embedded clauses and inverted main clauses (ER.OBL)**

- (8) *dat \*(er) in de fabriek en jongen werkte*  
 that there in the factory a boy worked  
 'that a boy worked in the factory (Lapscheure, Haegeman (1986:3))

**determiner+demonstrative in NP-ellipsis (THE+THAT)**

- (9) *De die zou k ik wiln op eetn.*  
 the those would I<sub>CLITIC</sub> I<sub>STRONG</sub> want up eat  
 'I would like to eat those.'  
 (Merelbeke)

***go get* in imperatives (GO-GET)**

- (10) *Gon haalt die bestelling ne keer!*  
 go<sub>INF</sub> get<sub>IMP</sub> that order a time  
 'Go get that order!'  
 (Ghent)

(Barbiers et al. 2006)



**our goal for today:** analyze the geographical patterns displayed in these mini-maps and determine to what extent they are indicative of grammatical differences between dialects or dialect areas

### 3 Statistical analysis of the aggregate data

**starting point:** use exploratory statistical methods to discern patterns and generalizations in the raw data and use formal (generative) linguistics to interpret and analyze those patterns and generalizations (see van Craenenbroeck (2014) for related work on verb clusters)

**main technique used in this paper: Correspondence Analysis:** a technique for exploring and visualizing categorical data, “useful for identification of systematic relationships between variables and capturing the main tendencies” (Levshina (2015:369)) → proceeds in 3 steps:

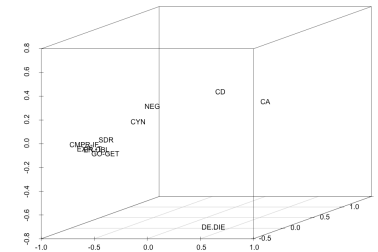
**step #1:** data table with the raw data:

	Brugge	Hulst	Dirksland	Ossendrecht	Diksmuide	...
CA	1	1	1	0	1	...
CD	1	1	0	1	1	...
SDR	0	0	0	0	1	...
NEG	1	0	0	0	1	...
CYN	1	1	0	0	1	...
EXPL-T	1	0	0	0	1	...
CMPR-IF	0	1	0	0	1	...
ER.OBL	1	0	0	0	1	...
THE+THAT	1	0	0	1	1	...
GO-GET	1	0	0	1	1	...

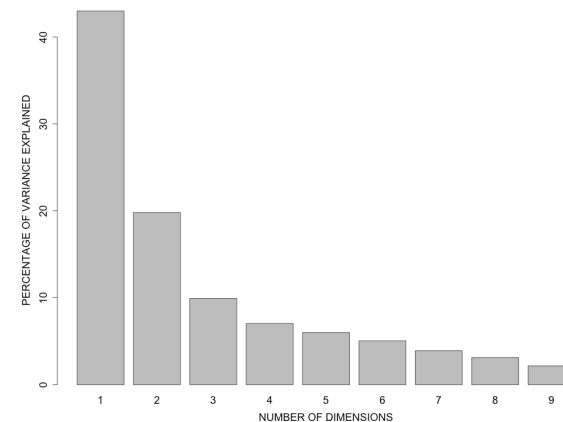
**step #2:** this data table is converted into a distance matrix:

	CA	CD	SDR	CYN	NEG	EXPL-T	CMPR-IF	THE+THAT	ER.OBL
CD	11.40								
SDR	10.14	7.28							
CYN	10.00	6.48	4.58						
NEG	10.63	6.08	4.69	5.56					
EXPL-T	10.04	8.30	4.24	5.56	6.16				
CMPR-IF	10.72	8.54	4.69	5.91	6.63	4.47			
THE+THAT	10.77	5.83	6.70	6.63	6.40	7.68	8.06		
ER.OBL	10.34	8.06	4.24	5.38	6.00	4.00	4.69	7.41	
GO-GET	10.72	8.30	4.89	5.91	6.32	5.29	5.09	7.68	5.29

**step #3:** the elements in the distance matrix (i.e. the ten phenomena) are represented as points in a lower-dimensional space (typically 2D or 3D), whereby geographical distance between points corresponds (as closely as possible) to distance recorded in the distance matrix

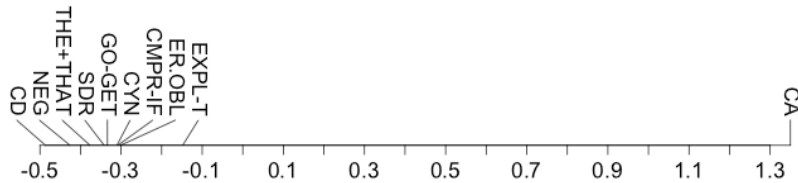


→ the number of dimensions taken into consideration in the analysis represents a trade-off between keeping the number small enough to be interpreted/visualized, but large enough so as to not lose any vital information:



## 4 From statistics to linguistics: interpreting the results

### 4.1 First dimension: complementizer agreement

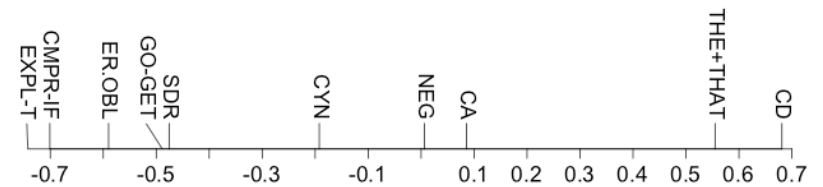


- the **first dimension** sets complementizer agreement (CA) apart from all other phenomena
- van Koppen (to appear) and references mentioned there: complementizer agreement is the overt reflex of unvalued  $\phi$ -features on C undergoing Agree with the subject
- **supporting evidence:** the  $\phi$ -feature specification of C (complementizer agreement) can be different from—and is hence independent from—that of T (Haegeman and Koppen (2012), van Koppen (2005)):

(11) *Ich dink de-s doow en ich ôs treffe.*  
 I think that-2SG you and I ourselves meet-PL  
 'I think that you and I will meet.'

(12) **the AgrC-parameter:**  
 C {does/does not} have unvalued  $\phi$ -features.

### 4.2 Second dimension: split DP vs. split CP



- the **second dimension** bundles clitic doubling (CD) and combinations of determiner+demonstrative (THE+THAT) and contrasts them with a cluster consisting of the use of 't 'it' as an expletive (EXPL-T), the use of *of 'if'* as comparative complementizer (CMPR-IF), the obligatory use of an expletive in embedded clauses and inverted main clauses (ER.OBL), the use of *go get* in imperatives (GO-GET), short *do* replies (SDR), and—to a lesser extent—clitics on 'yes' and 'no' (CYN) and the negative clitic (NEG)
- complementizer agreement (CA) no longer plays a role

**hypothesis:** CD and THE+THAT are signs of dialects having a split DP-domain, while EXPL-T, CMPR-IF, ER.OBL, GO-GET, SDR, CYN, and NEG are indicative of a split CP-domain

#### 4.2.1 Split DP

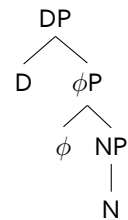
(13) *da-ze zaale lachen.*  
 that-they<sub>CLITIC</sub> they<sub>STRONG</sub> laugh  
 'that they are laughing.' (CD)

(14) *De die zou k ik wiln op eetn.*  
 the those would I<sub>CLITIC</sub> I<sub>STRONG</sub> want up eat  
 'I would like to eat those.' (THE+THAT)

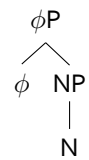
**CD:** van Craenenbroeck and van Koppen (2008)'s analysis of clitic doubling:

- **step one:** according to the tests in Déchaine and Wiltschko (2002) strong pronouns in doubling dialects are pro-DPs, while subject clitics are pro- $\phi$ Ps

(15) **strong subject pronoun**



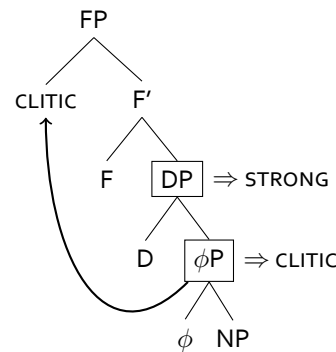
(16) **subject clitic**



- **step two:** a clitic-doubled subject is base-generated as a big DP (see also Belletti (2005), Uriagereka (1995), Laenzlinger (1998), Grohmann (2000), Polletto (2008), Kayne (2005)); more specifically, clitics are the result of  $\phi$ P-movement into the extended left periphery of the DP (see Szabolcsi (1994), Aboh (2004), Giusti (1996) among others)

⇒ there has to be an additional layer above DP to host the movement of the clitic (call it FP) in order to avoid an anti-locality violation (Abels (2003)):

(17)



- **step three:** when the resulting structure is handed over to PF, the moved  $\phi$ P is spelled out as a subject clitic, and the DP as a strong pronoun

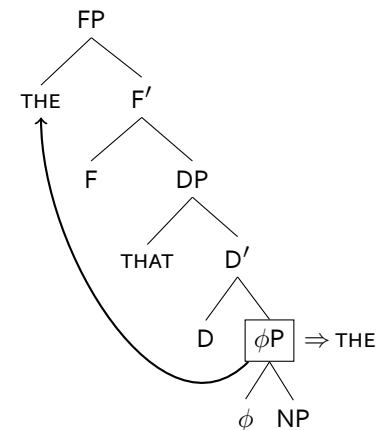
**THE+THAT:** Barbiers et al. (2016) argue for a similar big DP+movement-analysis

- **step one:** the definite article in THE+THAT pronominalizes  $\phi$ P, i.e. the part of the DP-structure hosting the noun, numerals, and adjectives:

- (18) a. *de dien*  
 the that  
 'that one'
- b. (\* *de dien opa*)  
 the that grandfather  
 'that grandfather'
- c. *De dieje (\* twee) (\* rode) liggen op de tafel.*  
 the those two red are on the table  
 'Those are on the table.'

- **step two:**  $\phi$ P moves into the left periphery of the DP; anti-locality again requires that the left periphery of DP be complex.

(19)

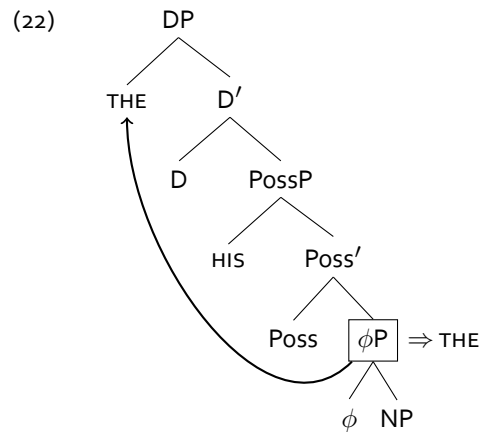


(20) **the D-parameter:**  
 DP {does/does not} have an extended left periphery.

Supporting evidence from possessive structures:

1. dialects with a negative setting for the D-parameter lack THE+THAT because they lack the additional DP-layer (no landing site for the definite article)
2. these dialects (as well as the dialects with a positive setting for the D-parameter) do have THE+POSS(ESSOR) (Corver and van Koppen (2010), and see Grohmann and Haegeman (2003), Haegeman (2004) for related proposals)

(21) *Ik vin de zaine ech geweldig.*  
 I find the his really great  
 'I find his really great.'  
 (Rotterdam)

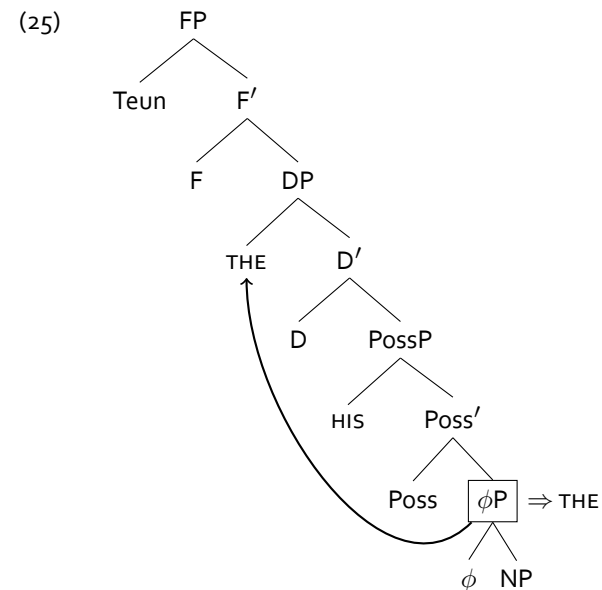


3. however, only dialects with a positive setting of the D-parameter allow doubling in THE+POSS:

(23) *Ik vein Teun de zinnen echt geweldig.*  
 I find Teun the his really great  
 'I find Teun's really great.'  
 Asten (+D-Parameter)

(24) *Ik vin (\*Teun) de zaine ech geweldig.*  
 I find Teun the his really great  
 'I find his really great.'  
 Rotterdam (-D-Parameter)

→ this can be explained by the presence of an additional D-layer in the +D-dialects:



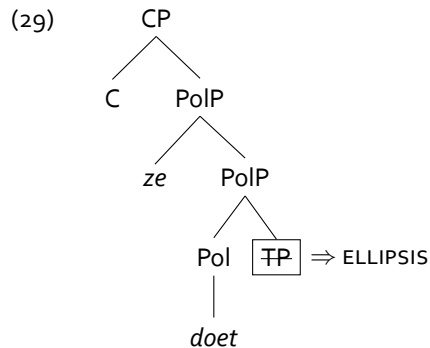
4.2.2 Split CP

(26) A: *IJ zal nie komen.* B: *IJ doet.*  
 he will not come he does  
 'A: He won't come. B: Yes, he will.' (SDR)

(27) A: *Wilde nog koffie, Jan?* B: *Ja-k.*  
 want.you PART coffee Jan Yes-I  
 'A: Do you want some more coffee, Jan? B: Yes.' (CYN)

**SDR:** van Craenenbroeck (2010): short *do* replies only occur in non-embedded contradictory polar replies to declarative clauses → they involve TP-ellipsis licensed by a left peripheral polarity head:

(28) A: *Marie ziet Pierre niet graag.* B: *Ze doet.*  
 Mary sees Pierre not gladly she does  
 'A: Mary doesn't love Pierre. B: Yes, she does.'



• **supporting evidence:** short *do* replies are only compatible with high left-peripheral adverbs:

(30) A: *Jef zeit da gou veel geldj etj.* B: *K'en duu {pertang / \*nie mieje. }*  
 Jef says that you much money have I.NEG doe however not anymore  
 'A: Jef says you have a lot of money. B: I don't, however/\*anymore.'

**CYN:** van Craenenbroeck (2010): the occurrence of clitics on 'yes' and 'no' are derived from short *do* replies: they involve further (higher) ellipsis of an already truncated structure (see Haegeman and Weir (2015) for a different analysis—which also makes use of a split CP-domain—of CYN in the West Flemish dialect of Lapscheure)

• **supporting evidence:** *there*-expletives in short *do* replies and yes/no+clitics:

(31) a. *Dui stui ne vantj inn of.*  
 there stands a man in.the garden  
 'There's a man standing in the garden.'  
 b. *{\*Dui /T} en duut. // Jui {\*d'r /t}.*  
 there /it NEG does. yes there it  
 'No, there isn't. // Yes.'

(32) **the C-parameter (FIRST VERSION)**  
 The CP-domain {does/does not} project a separate PolP.

**note:** the negative clitic *en* (NEG, cf. (33)) also fits this pattern: as argued by van Craenenbroeck (2010), it too occupies a high Pol-head in the left periphery

(33) *K en goa nie naar schole.*  
 I NEG go not to school  
 'I'm not going to school.' (NEG)

**EXPL-T:** only occurs in subject initial main clauses in the relevant dialects; in all other positions the locative expletive *er/daar* 'there' is used:

• Dialects with EXPL-T (Haegeman (1986), Grange and Haegeman (1989), L. Haegeman p.c.)

(34) a. *T zyn gisteren drie studenten gekommen.*  
 it are yesterday three students come  
 'Three students came yesterday.'

- b. \**Zyn t gisteren drie studenten gekommen?*  
are it yesterday three students come  
INTENDED: 'Did three students come yesterday?'
- c. \**dan t gisteren drie studenten gekommen zyn.*  
that.PL it yesterday three students come are  
INTENDED: 'that three students came yesterday.'

• Dialects without EXPL-T

- (35) a. *D'r staan twee venten in den of.*  
there stand two men in the garden  
'There are two men standing in the garden.'
- b. *Staan d'r twee venten in den of?*  
stand there two men in the garden  
'Are there two men standing in the garden?'
- c. *dat er twee venten in den of staan.*  
that there two men in the garden stand  
'that there are two men standing in the garden.'

van Craenenbroeck (2011): EXPL-T is the result of an additional CP-layer:

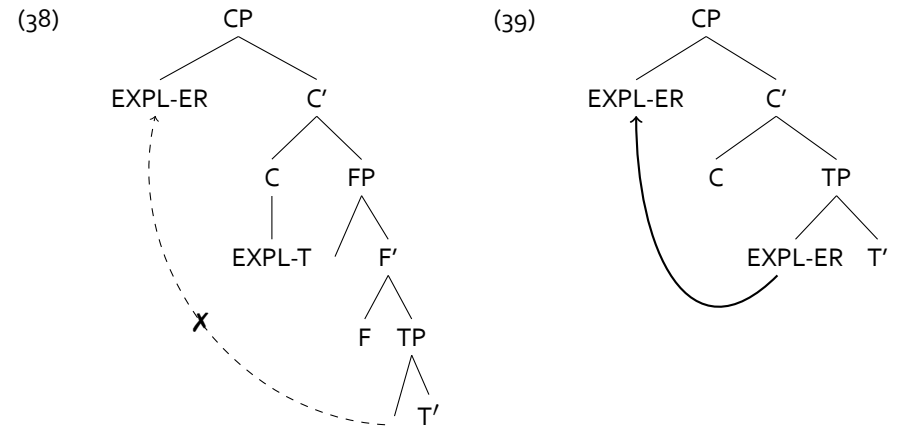
- EXPL-T is a main clause complementizer/particle much like Breton *bez* or Welsh *fe*: (i) these are also disallowed in embedded clauses and inverted main clauses; (ii) they also do not trigger agreement on the verb

- (36) *Bez'e ra glva.*  
PRT ® does rain  
'It rains.'  
(Breton, Jouitteau (2008))

- (37) *Fe glywes i'r cloc.*  
PRT heard.1SG the clock  
'I heard the clock.'  
(Welsh, Jouitteau (2008))

- **assumption:** in expletive-initial main clauses the C-domain needs to be overtly realized in all dialect regions (= the V2-requirement)

- **analysis:** in dialects without EXPL-T the regular *there*-expletive can move to specCP to accomplish this (39), but in dialects with EXPL-T there is an additional CP-layer which prevents this movement (38). As a result, the C-domain is realized by spelling out C as EXPL-T:

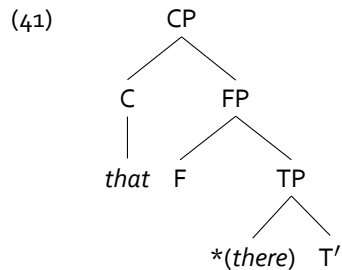


ER.OBL:

- (40) *dat \*(er) in de fabrieke nen jongen werkte*  
that there in the factory a boy worked  
'that a boy worked in the factory'  
(Lapscheure, Haegeman (1986:3))

- **proposal:** we want to treat this as an ECP-style effect: in dialects with a split CP, the subject position is insufficiently local to C and as a result cannot remain empty





**GO-GET:**

- infinitival GO and infinitival COME appear within the left periphery of imperative clauses.

(42) *Gon haalt die bestelling ne keer!*  
 go<sub>INF</sub> get<sub>IMP</sub> that order a time  
 'Go get that order!' (GO-GET)

(43) *Komen eet maar al gauw want 't is gereed!*  
 come<sub>INF</sub> eat<sub>IMP</sub> PART PART fast because it is ready  
 'Come and eat quickly, because it is ready!' (COME-EAT)

- they appear to be functional, grammaticalized items rather than 'real' lexical verbs (see Abney (1987), Hopper and Traugott (1993), Benjamin (2010), Waltereit and Detges (2007), van Craenenbroeck and van Koppen (2013)):

1. functional items form a closed class
  - GO and COME are the only verbs that can be used in this way
  - GO also displays functional behavior as a motional auxiliary and in verb doubling (Haegeman 1990)
  - some dialects even have a dedicated verb (meaning *go*) in these examples:

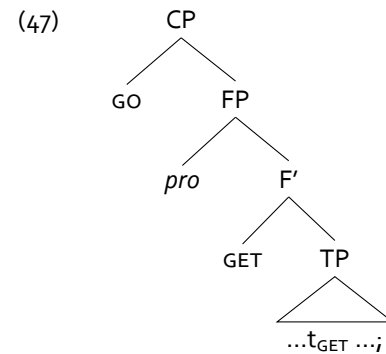
(44) *Teure roept e keer ui broere.*  
 go call a time your brother  
 'Go call your brother. (Waregem)

2. functional items can be morphologically defective
  - GO and COME appear only in their infinitival form
3. functional items are phonologically reduced
  - GO is phonologically reduced with respect to normal infinitive GO (L. Haegeman p.c.):

(45) *Gon/\*Goan kykt hoe loate dat et is.*  
 go<sub>reduced</sub>/go<sub>full</sub> look how late that it is  
 'Go see what the time is.'

(46) *K peinzen dan k morgen moeten no Gent*  
 I think that I tomorrow must to Gent  
 \*gon/goan.  
 go<sub>reduced</sub>/go<sub>full</sub>  
 'I think I have to go to Gent tomorrow.'

**analysis:** the dialects that allow grammaticalization of GO and COME into clause-initial functional elements have an additional CP-layer to host them



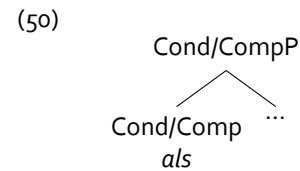
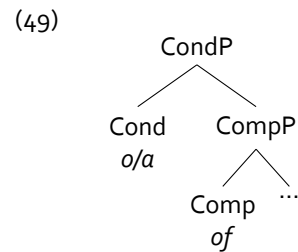
**McCloskey (1997:214):** "Ulster English has an invariant imperative marker *gon* (from *go on*). There is some evidence that this element appears in the C-position":

(48) Gon make us (you) a cup of tea.

**CMPR-IF:** dialects with CMPR-IF differ from dialects without CMPR-IF in that they have an unique form for the conditional complementizer:

	West-Flemish	East-Flemish	(other) Southern Dutch	Northern Dutch
<b>conditional</b>	<i>o/a</i>	<i>os/as</i>	<i>as</i>	<i>als</i>
<b>comparative</b>	<i>of</i>	<i>of</i>	<i>as</i>	<i>als</i>

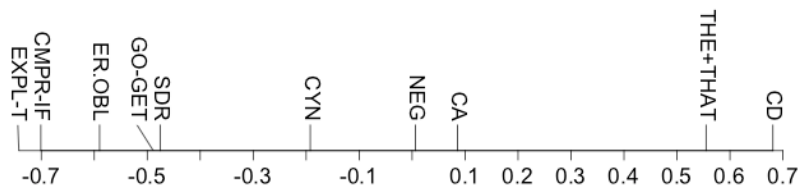
→ this might indicate that the CMPR-IF dialects have two separate C-layers to express conditional and comparative information, whereas the other dialects bundle both features on one single head



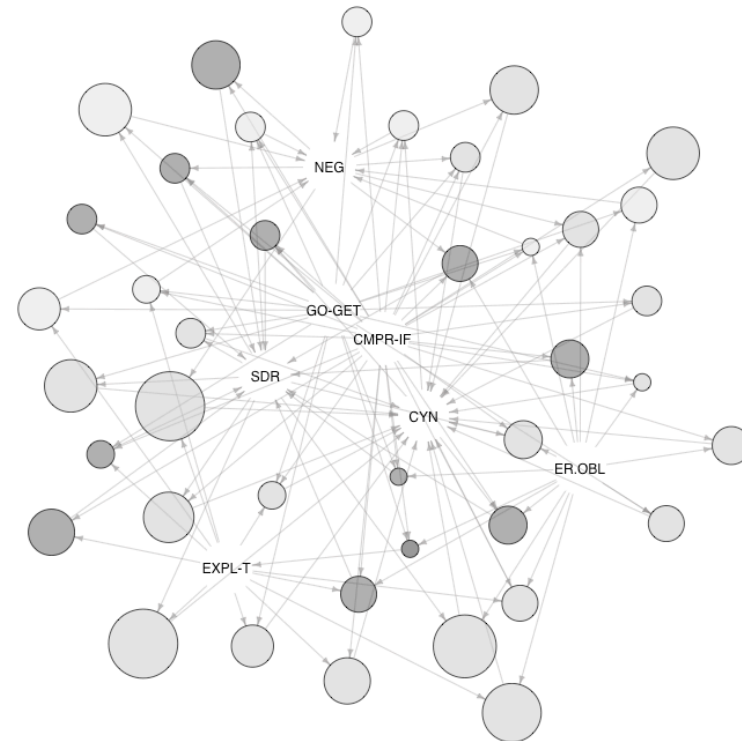
**Summary**

(51) **the C-parameter (FINAL VERSION)**  
 CP {does/does not} have an extended left periphery.

- recall, though, that CYN and NEG didn't cluster neatly with the rest of the split CP-phenomena:

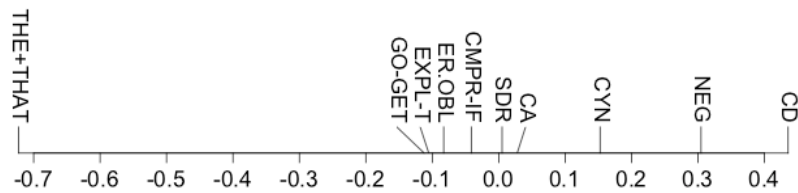


- their special status is further confirmed if we look at association rules between the C-related phenomena (Spruit 2008, Piatetsky-Shapiro 1991)

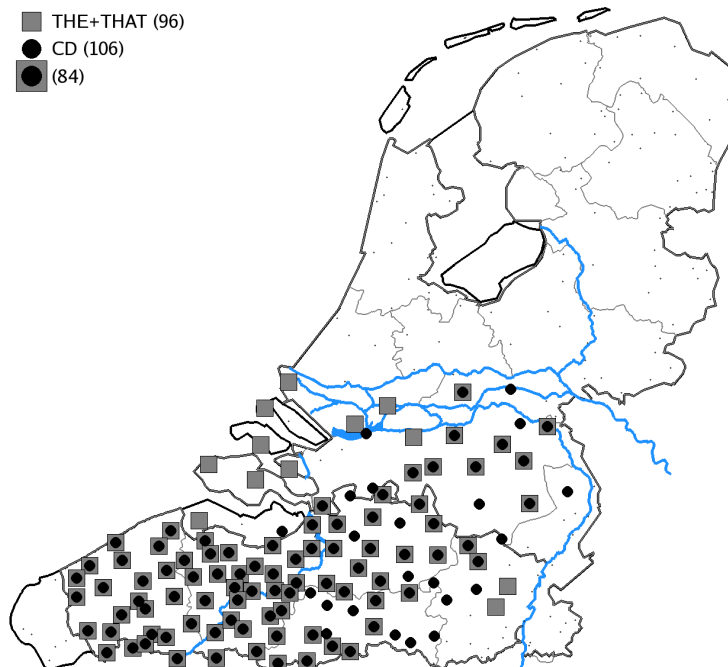


- all arrows point towards either CYN, NEG, or SDR: **IF** a dialect has one or more of the split C-phenomena, **THEN** it also always has one of the polarity-related phenomena
- we take this to mean that polarity acts as a cue for the language learner that she is acquiring a split C-dialect

### 4.3 Third dimension: CD vs. THE+THAT



- the **third dimension** sharply contrasts CD with THE+THAT



→ we need to discern between three scenarios:

1. dialects that have both CD and THE+THAT → positive setting for the D-parameter
2. dialects that have THE+THAT but no CD: almost all located in Zeeland → we will argue that they have a negative setting for the D-parameter and only apparent THE+THAT
3. dialects that have CD but no THE+THAT: no clear geographic region → we will suggest that these dialects have a positive setting for the D-parameter and that the absence of THE+THAT is an artefact of the question(naire) that was used

#### scenario #2: THE+THAT but no CD

- Barbiers et al. (2016) argue that THE+THAT in Zeeland does not represent a genuine, productive case of demonstrative doubling, but rather a lexicalized substantive pronoun that merely has the surface appearance of demonstrative doubling:

#### North Brabant demonstrative doubling

- (52) a. *den /dien /dizzen opa*  
 the.MASC that.MASC this.MASC grandfather  
 'the/that/this grandfather'
- b. *de /die /dees tante*  
 the.FEM that.FEM this.FEM aunt  
 'the/that/this aunt' (Asten)
- (53) a. *den dien /den dizzen*  
 the.MASC that.MASC the.MASC this.MASC  
 [speaking of grandfathers:] 'that/this one'
- b. *de die /de dees*  
 the.FEM that.FEM the.FEM this.FEM  
 [speaking of aunts:] 'that/this one' (Asten)

→ both the determiner and the demonstrative in THE+THAT-doubling display completely regular agreement that is also attested in non-elliptical contexts

**Zeeland demonstrative doubling**

- (54) a. *de /die /deze opa*  
 the that this grandfather  
 'the/that/this grandfather'  
 b. *de /die /deze tante*  
 the that this aunt  
 'the/that/this aunt' (Zierikzee)
- (55) a. *den diejen /?? den dizzen*  
 the.MASC that.MASC the.MASC this.MASC  
 [speaking of grandfathers:] 'that/??this one'  
 b. *den diejen /?? den dizzen*  
 the.MASC that.MASC the.MASC this.MASC  
 [speaking of aunts:] 'that/??this one' (Zierikzee)

→ both the determiner and the demonstrative in THE+THAT-doubling display an archaic and fixed type of agreement otherwise unattested in the nominal paradigm + only distal demonstratives can partake in this pattern

**The two points in Belgian Limburg**

- these have a different pronominal paradigm than the other dialects with THE+THAT: they use *de, dich* instead of *ge, gij*
  - Postma (2011): *dich* is a complex pronoun containing the clitic *d* → if a clitic is already part of the strong pronoun, it cannot be clitic doubled any further
- these dialects have a positive setting for the D-parameter, but an independent factor is blocking clitic doubling

**scenario #3: CD but no THE+THAT**

- Corver and van Koppen (2015): THE+THAT only shows up in contrastive elliptical contexts; in non-contrastive ones the demonstrative is not doubled

- (56) *Ik ging vaker bij deze tante logeren dan bij \*(de) die.*  
 I went more.often with this aunt stay than with the that  
 'I used to stay with this aunt more often than with that one.'

- (57) [*Speaking of an aunt:*] (\* *De*) *die is altijd heel aardig.*  
 the that is always very nice  
 '[*Speaking of an aunt:*] She is always very nice.'

- the question that was used to test for THE+THAT in the SAND-project is not necessarily contrastive:

- (58) *De die zou ik niet durven opeten.*  
 the those would I not dare eat  
 'I wouldn't dare to eat those.'

- **conjecture:** the lack of THE+THAT in certain Brabant locations is not due to a negative setting of the D-parameter, but an artefact of the data collection
- **supporting evidence:** earlier dialect questionnaires do show THE+THAT in the entire CD-area:

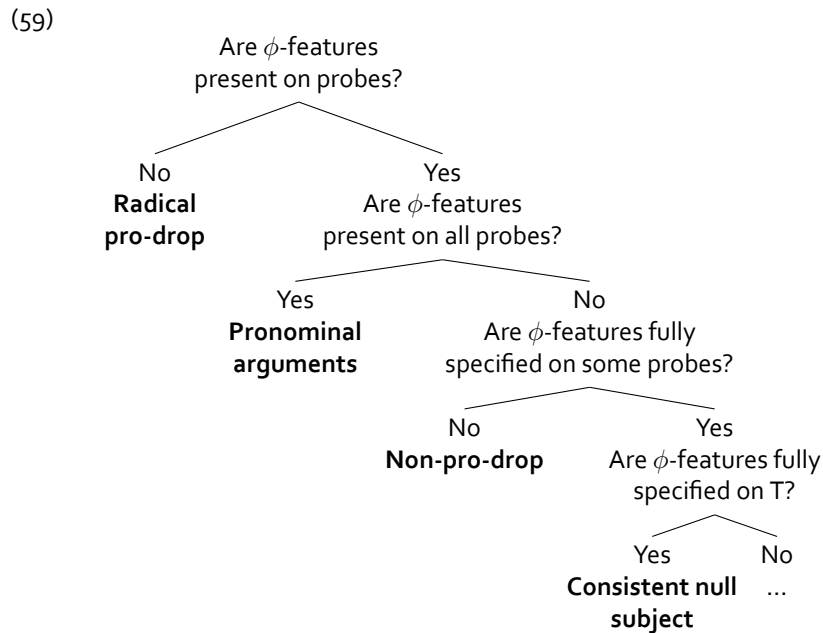


### 5 Parameter interactions and parameter hierarchies

**note:** the three parameters introduced above seem to be of two different types: the AgrC-parameter is about the presence/absence of a specific unvalued feature on a specific functional head, while the other two pertain to the distribution of formal features across phasal peripheries

→ both types can be implemented in terms of **parameter hierarchies** (Biberauer et al. 2014, Biberauer and Roberts 2015)

**AGRC-PARAMETER:** represents a choice point at some (relatively low) point in the null argument hierarchy of Biberauer et al. (2014):

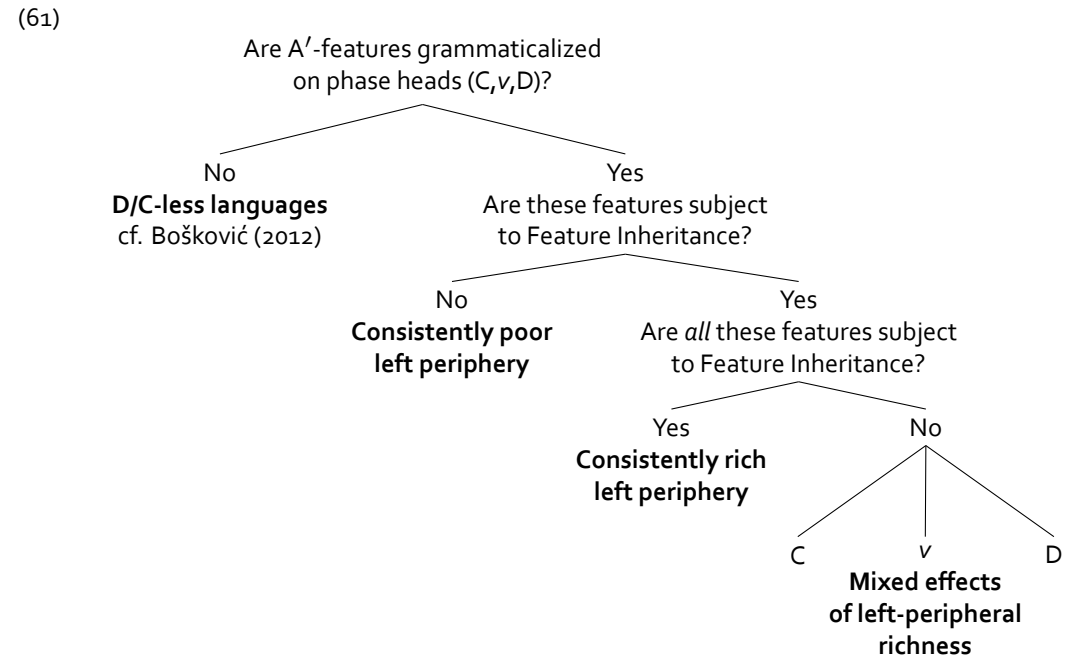


**supporting evidence:** some types of COMP-agreement license null subjects:

(60) *Et geberde doest fot giest.*  
 it happened when.2SG away went  
 'It happened when you went away.' (Lies)

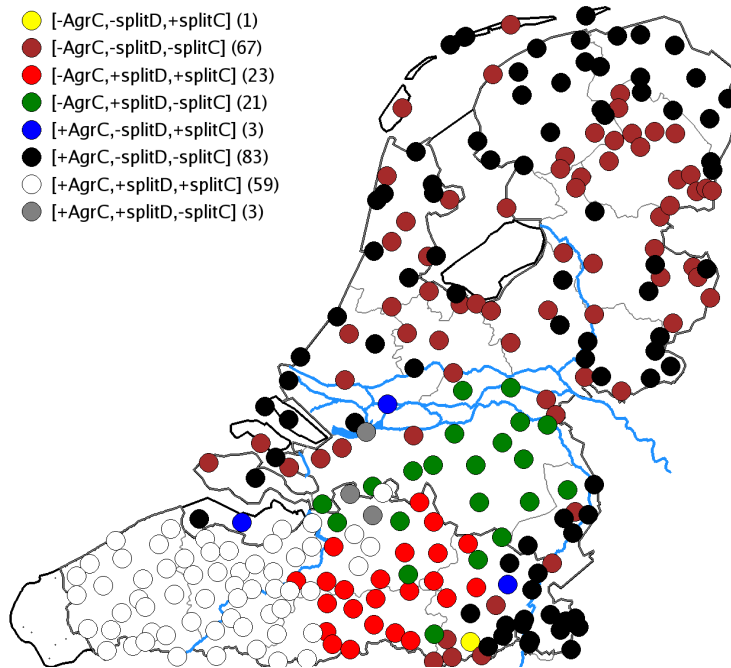
**D/C-PARAMETERS:** we propose these parameters constitute choice points in a single parameter hierarchy regulating the grammaticalization of A'-features on phase heads and their surrounding projections

→ we implement the variation as a parametrization of Feature Inheritance (Chomsky (2007), cf. also Ouali (2008), van Craenenbroeck and van Koppen (2007), Miyagawa (2010), Jiménez-Fernández and Miyagawa (2014))



→ with this as background we can now explore the interaction between the three parameters:

- [-AgrC,-splitD,+splitC] (1)
- [-AgrC,-splitD,-splitC] (67)
- [-AgrC,+splitD,+splitC] (23)
- [-AgrC,+splitD,-splitC] (21)
- [+AgrC,-splitD,+splitC] (3)
- [+AgrC,-splitD,-splitC] (83)
- [+AgrC,+splitD,+splitC] (59)
- [+AgrC,+splitD,-splitC] (3)



	+AGRC	
	+SPLIT C	-SPLIT C
+split D	East & West Flanders (N=59)	Nieuwmoer, Sint Lenaarts, Moerdijk (N=3)
-split D	Opglabbeek, Sliedrecht, Hoek (N=3)	Holland, Limburg, Friesland, Groningen (N=83)

	-AGRC	
	+SPLIT C	-SPLIT C
+split D	Flemish Brabant & Antwerp (N=23)	North Brabant (N=21)
-split D	Borgloon (N=1)	Drenthe, Utrecht (N=67)

note:

- five of the eight logically possible parameter combinations are well attested, both in terms of the number of locations and in terms of those locations forming a coherent geographical region
- the remaining three are nearly completely absent:
  1. [+AgrC,+split C,-split D]: 3 locations, no geographical pattern
  2. [+AgrC,-split C,-split D]: 3 locations, on the border between Flanders and North Brabant
  3. [-AgrC,+split C,-split D]: 1 location
- the scarcity of [+AgrC,-split C,-split D] seems to be due to the border between [+AgrC] and [-AgrC] and the one between [+split C] and [-split C] coinciding in the Flemish-North Brabant transition area
- the other two missing parameter combinations might indicate an implicational relation between the split D- and the split C-parameter: a positive value for the latter implies a positive value for the former → there might be more structure at the bottom of the hierarchy in (61)

## 6 Beyond Dutch: split C and split D in Afrikaans

- all other things being equal we would expect the properties discussed above to cluster together in other languages as well
- a promising case study in this respect might be Afrikaans:

1. it appears to have SDR (Th. Biberauer p.c.):

(62) *A: Hy slaap. B: Hy doen!*  
 he sleeps he does  
 'A: He's sleeping. B: Indeed!'

2. it spells out a high left-peripheral Pol-head as clause-final *nie* (NEG) (Biberauer (2008))

(63) *Ek het nie verstaan nie.*  
 I have not understood not  
 'I didn't understand.'

3. it seems to have the GO-GET construction (Vanbelleghem (2014:17), citing Stadler (1992:92–93))

(64) *Gaan laai dit by die huise af.*  
 go load this by the house off  
 'Go and unload this by the house.'

4. the expletive *daar* 'there' is obligatory in presentational structures (Biberauer (2010))

(65) *dat \*(daar) in die dorp 'n internetkafee is.*  
 that there in the village a internet.cafe is  
 '...that there's an internet cafe in the village.'

5. while Afrikaans doesn't have CMPR-IF, it does show evidence of an extended left periphery in comparatives, through the use of *wat* 'what' to the right of the comparative complementizer (Donaldson (1993:309)):

(66) *Ek het vanaand veel minder geëet as wat ek*  
 I have tonight much less eaten as what I  
*gisteravond geëet het.*  
 yesterday.evening eaten have  
 'I ate much less tonight than last night.'

6. however, Afrikaans doesn't have CYN or EXPL-T (maybe because it doesn't have clitics?)

**summarizing:** the initial evidence for assuming a split C in Afrikaans seems fairly convincing

- for split D on the other hand, the evidence is much less clear: Afrikaans does not have CD (possibly due to the absence of clitics), nor does it possess THE+THAT, but it can double demonstratives by a locative adverb (Leu 2008):

(67) *Ek het hier die huis gebou.*  
 I have here this house built  
 'I built this house.'

- to the extent that Afrikaans has a negative setting for the split D-parameter, it suggests that the implicational relation between [+split C] and [+split D] found in Dutch dialects is accidental; clearly, more research is needed

## 7 Summary and conclusions

- a quantitative correlation between variation patterns can be translated into a qualitative analysis in terms of grammatical parameters
- the ten dialect phenomena (CA, THE+THAT, CD, CYN, SDR, NEG, CMPR-IF, GO-GET, ER.OBL, and EXPL-T) reduce to three parameters: CA-parameter, split C-parameter, split D-parameter
- the C/D-parameters form part of the same parameter hierarchy, whereas the CA-parameter is part of a different one

## References

- Abels, Klaus. 2003. Successive cyclicity, anti-locality, and adposition stranding. Doctoral Dissertation, University of Connecticut at Storrs.
- Abney, Steven. 1987. The English noun phrase in its sentential aspect. Doctoral Dissertation, Massachusetts Institute of Technology.
- Aboh, Enoch Oladé. 2004. Topic and focus within D. *Linguistics in the Netherlands* 21:1–12.
- Barbiers, Sjef, Marjo van Koppen, Hans Bennis, and Norbert Corver. 2016. Microcomparative MORphosyntactic REsearch (MIMORE): Mapping partial grammars of Flemish, Brabantish and Dutch. *Lingua* 178:5–31.
- Barbiers, Sjef, et al. 2006. *Dynamische syntactische atlas van de Nederlandse dialecten (dynasand)*. Meertens Institute. www.meertens.knaw.nl/sand/.
- Belletti, Adriana. 2005. Extended doubling and the VP periphery. *Probus* 17:1–35.
- Benjamin, Fagard. 2010. E vida, olha...: Imperatives as discourse markers and grammaticalization paths in Romance: A diachronic corpus study. *Languages in contact* 10:245–267.
- Biberauer, Theresa. 2008. Doubling and omission: insights from Afrikaans negation. In *Microvariation in syntactic doubling*, ed. Sjef Barbiers, Olaf Koenenman, Marika Lekakou, and Margreet van der Ham, 103–140. Bingley: Emerald.
- Biberauer, Theresa. 2010. Semi null-subject languages, expletives and expletive pro. In *Null subjects in Minimalist theory*, ed. Theresa Biberauer, Anders Holmberg, Ian Roberts, and Michelle Sheehan, 153–199. Cambridge: Cambridge University Press.
- Biberauer, Theresa, and Ian Roberts. 2015. Rethinking formal hierarchies: a proposed unification. *Cambridge Occasional Papers in Linguistics* 7:1–31.
- Biberauer, Theresa, Ian Roberts, Michelle Sheehan, and Anders Holmberg. 2014. Complexity in comparative syntax: The view from modern parametric theory. In *Measuring grammatical complexity*. New York: Oxford University Press.
- Bošković, Željko. 2012. On NPs and clauses. In *Discourse and grammar: from sentence types to lexical categories*, ed. G'unter Grewendorf and Thomas Ede Zimmerman, 179–242. Berlin and New York: Mouton de Gruyter.
- Chomsky, Noam. 2007. Approaching UG from below. In *Interfaces + Recursion = Language? Chomsky's minimalism and the view from syntax-semantics*, ed. Uli Sauerland and Hans-Martin Gärtner, 1–30. Berlin and New York: Mouton de Gruyter.
- Corver, Norbert, and Marjo van Koppen. 2010. Ellipsis in Dutch possessive noun phrases: a micro-comparative approach. *The Journal of Comparative Germanic Linguistics* 13:99–140.
- Corver, Norbert, and Marjo van Koppen. 2015. Pronominalization and variation in Dutch demonstrative expressions. Ms. Utrecht University.
- van Craenenbroeck, Jeroen. 2010. *The syntax of ellipsis. Evidence from Dutch dialects*. New York: OUP.
- van Craenenbroeck, Jeroen. 2011. Germanic expletives revisited. In pursuit of Kayne's dream. Handout for an invited talk at the 26th Comparative Germanic Syntax Workshop.
- van Craenenbroeck, Jeroen. 2014. The signal and the noise in Dutch verb clusters. A quantitative search for parameters. Ms. KU Leuven.
- van Craenenbroeck, Jeroen, and Marjo van Koppen. 2007. Feature inheritance and multiple phase boundaries. Handout of a talk at GLOW 30, CASTL, Tromsø, Norway.
- van Craenenbroeck, Jeroen, and Marjo van Koppen. 2008. Pronominal doubling in Dutch dialects: big DPs and coordinations. In *Microvariation in syntactic doubling*, ed. Sjef Barbiers, Olaf Koenenman, Marika Lekakou, and Margreet van der Ham, volume 36 of *Syntax and Semantics*, 207–249. Bingley: Emerald.
- van Craenenbroeck, Jeroen, and Marjo van Koppen. 2013. Lexical items merged in functional heads: The grammaticalization path of ECM-verbs in Dutch dialects. Handout of a talk at GLOW 37: Workshop on syntactic variation and change.
- Déchainé, Rose-Marie, and Martina Wiltschko. 2002. Decomposing pronouns. *Linguistic Inquiry* 33:409–442.
- Donaldson, Bruce. 1993. *A grammar of Afrikaans*. Berlin: Mouton de Gruyter.
- Giusti, Giuliana. 1996. Is there a focus p and a topic p in the noun phrase structure? *University of Venice Working Papers in Linguistics* 6:105–128.
- Grange, C., and Liliane Haegeman. 1989. Subordinate clauses: adjuncts or arguments: the status of *het* in Dutch. In *Sentential complementation and the lexicon. studies in honour of Wim de Geest*, ed. Dany Jaspers, Wim Klooster, Yvan Putseys, and Pieter Seuren, 155–171. Dordrecht: Foris publications.
- Grohmann, Kleanthes K. 2000. Prolific peripheries: a radical view from the left. Doctoral Dissertation, University of Maryland.
- Grohmann, Kleanthes K., and Liliane Haegeman. 2003. Resuming reflexives. *Nordlyd* 31:46–62.
- Haegeman, Liliane. 1986. *Er-sentences in West-Flemish*. Ms. Université de Genève.
- Haegeman, Liliane. 1990. The syntax of motional *gaan* in West Flemish. In *Linguistics in the Netherlands*, ed. Reineke Bok-Benneman and Peter Coopmans, 81–90. Dordrecht: Foris.
- Haegeman, Liliane. 2004. DP-periphery and clausal periphery: Possessor doubling in West Flemish. In *Peripheries: Syntactic edges and their effects*, ed. David Adger, Cécile de Cat, and George Tsoulas, 211–240. Dordrecht, The Netherlands: Kluwer Academic Publishers.
- Haegeman, Liliane, and Marjo van Koppen. 2012. Complementizer agreement and the relation between T and C. *Linguistic Inquiry* 43:441–454.
- Haegeman, Liliane, and Andrew Weir. 2015. The cartography of *yes* and *no* in west Flemish. In *Discourse-oriented syntax*, ed. Josef Bayer, Roland Hinterhölz, and Andreas Trotske, 175–210. Amsterdam: John Benjamins.
- Hopper, P., and Elizabeth Closs Traugott. 1993. *Grammaticalization*. Cambridge: Cambridge University Press.
- Jiménez-Fernández, Ángel L., and Shigeru Miyagawa. 2014. A feature-inheritance approach to root phenomena and parametric variation. *Lingua* 145:276–302.
- Jouitteau, Mélanie. 2008. The brythonic reconciliation: from verb-first to generalized verb-second. In *Linguistic Variation Yearbook*, ed. Jeroen van Craenenbroeck and Johan Rooryck, volume 7. Amsterdam: John Benjamins Publishing Company.
- Kayne, Richard. 2005. Pronouns and their antecedents. In *Movement and silence*, 105–135. Oxford: Oxford University Press.
- van Koppen, Marjo. 2005. One probe, two goals: aspects of agreement in dutch dialects. Doctoral Dissertation, Universiteit Leiden.
- van Koppen, Marjo. to appear. *Complementizer agreement*. Blackwell Companion to Syntax. Blackwell Publishers.
- Laenzlinger, Christopher. 1998. *Comparative studies in word order variations: pronouns, adverbs and German clause structure*. Number 20 in *Linguistics Today*. Amsterdam: John Benjamins.
- Leu, Thomas. 2008. The internal syntax of determiners. Doctoral Dissertation, NYU.
- Levshina, Natalia. 2015. *How to do linguistics with R. Data exploration and statistical analysis*. Amsterdam: John Benjamins.
- McCloskey, James. 1997. Subjecthood and subject positions. In *Elements of grammar*, ed. Liliane Haegeman, 197–235. Dordrecht: Kluwer Academic Publishers.
- Miyagawa, Shigeru. 2010. *Why Agree? Why Move? Unifying agreement-based and discourse-configurational languages*. Cambridge, Mass.: The MIT Press.
- Ouali, Hamid. 2008. On C-to-T  $\phi$ -feature transfer: the nature of agreement and anti-agreement in Berber. In *Agreement restrictions*, ed. Roberta D'Alessandro, Susan Fischer, and Gunnar Hrafnbjargason, 159–180. Berlin and New York: Mouton de Gruyter.
- Piatetsky-Shapiro, G. 1991. Discovery, analysis, and presentation of strong rules. In *Knowledge discovery in databases*, ed. G. Piatetsky-Shapiro and W. Frawley, 229–248. Cambridge, Massachusetts: AAAI/The MIT Press.
- Poletto, Cecilia. 2008. Doubling as a spare movement strategy. In *Microvariation in syntactic doubling*, ed. Sjef et al. Barbiers, volume 36 of *Syntax and Semantics*, 36–68. Bingley: Emerald.
- Postma, Gertjan. 2011. Het verval van het pronomen *du* – dialectgeografie en historische syntaxis. *Nederlandse Taalkunde* 18:288–303.
- Spruit, Marco René. 2008. Quantitative perspectives on syntactic variation in Dutch dialects. Doctoral Dissertation, Universiteit van Amsterdam.
- Stadler, L.G. De. 1992. Die werkwoorde 'kom' en 'gaan' as deiktische medewerkwoorde. *South African Journal of Linguistics* 30:89–98.
- Szabolcsi, Anna. 1994. *The noun phrase, 179–245*. Syntax and Semantics 27. Academic Press.
- Uriagereka, Juan. 1995. Aspects of the syntax of clitic placement in Western Romance. *Linguistic Inquiry* 26:79–124.
- Vanbellegem, Miguel. 2014. Ga hem halen, Gaan haalt hem, Loop haal hom. Een studie over de Afrikaanse 'schakelwerkwoorden' kom, loop en gaan, en hun equivalenten in het Nederlands en haar dialecten. Master's thesis, Ghent University.
- Waltherit, R., and U. Detges. 2007. Different functions, different histories. Modal particles and discourse markers from a diachronic point of view. *Catalan journal of linguistics* 6:61–80.