

Qualitatively and Quantitatively Correlating Microvariation Parameter interactions in Dutch dialects

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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 correlate variation patterns in Dutch dialects
- **THEORETICAL GOAL:** analyze the variation patterns, identify the relevant parameters, and establish the parameter hierarchies they are part of

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- 2 Raw data of ten dialect phenomena
- 3 Statistical analysis of the aggregate data
- 4 From statistics to linguistics: interpreting the results
- 5 The bigger picture: parameter interaction & parameter hierarchies
- 6 The smaller picture: nanovariation
- 7 Summary

2 Raw data of ten dialect phenomena

complementizer agreement (CA)

- (1) *da-n Pol en Jan goan kommen*
that-PL Pol and Jan go-PL come
'that Pol and Jan will come.'
(Lapscheure)

clitic doubling (CD)

- (2) *da-ze zaale lachen.*
that-they_{CLITIC} they_{STRONG} laugh
'that they are laughing.'
(Wambeek)

short *do* replies (SDR)

- (3) *A: E slaapt niet. B: E doet.*
he sleeps not he does
'A: He's not sleeping. B: Yes, he is.'
(Waals-Kappel)

negative clitic (NEG)

- (4) *Ken goa nie noar schole.*
I NEG go not to school
'I'm not going to school.'
(Tielt)

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)

***have* as the perfect auxiliary for ergative verbs like *be/fall/come* (HAVE+ERG)**

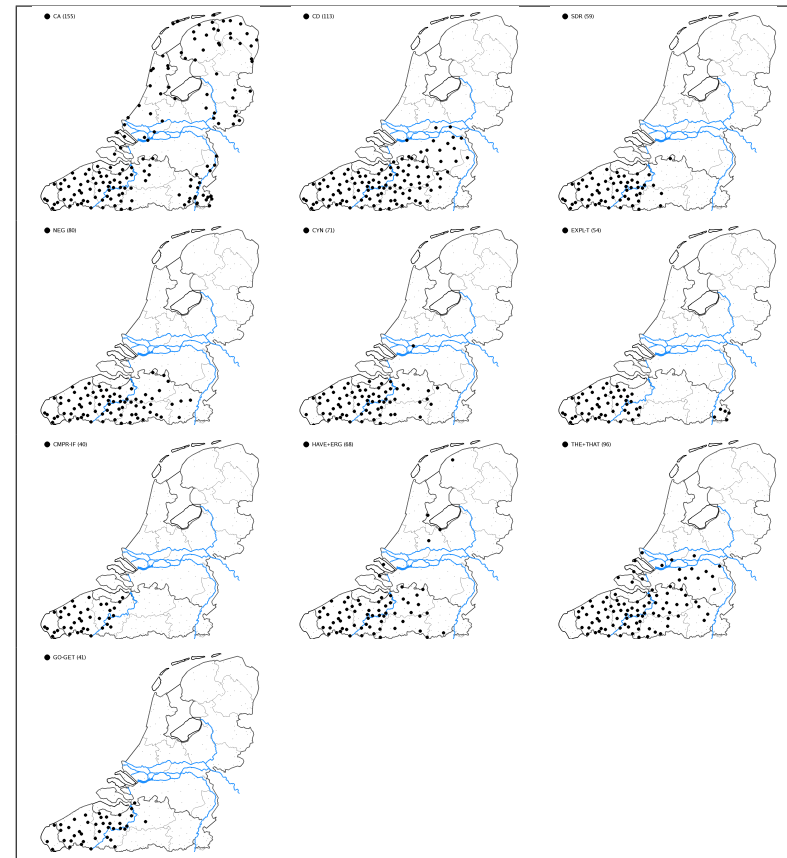
- (8) *Ken noa de markt geweest.*
 I have to the market been
 'I've been to the market.'
 (Izenberge)

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

- (9) *De die zou k ik wiln op eetn.*
 the those would I_{CLITIC} I_{STRONG} want up eat
 'I would like to eat those.'
 (Merelbeke)

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

- (10) *Gon haalt die bestelling ne keer!*
 go_{INF} get_{IMP} that order a time
 'Go get that order!'
 (Ghent)



→ these minimaps suggest that the ten phenomena in (1)–(10) might be related to one another, but where should we start and how should we proceed in making sense of these similarities?

3 Statistical analysis of the aggregate data

starting point: van Craenenbroeck (2014): explore the extent to which formal theoretical (generative) linguistics can benefit from exploratory statistical methods for mining large datasets (and vice versa)

technique used in this paper: Correspondence Analysis (CA, Greenacre (2007))
 → proceeds in a number of steps:

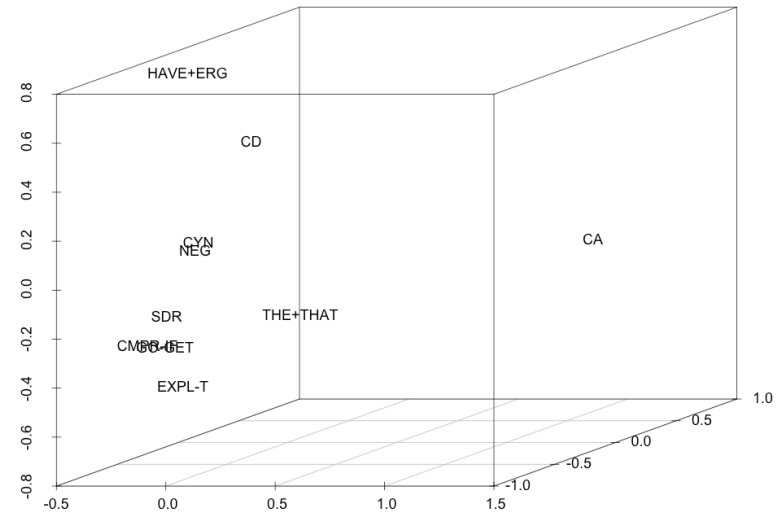
step #1: data table with the raw data:

	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	...
HAVE+ERG	1	1	1	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:

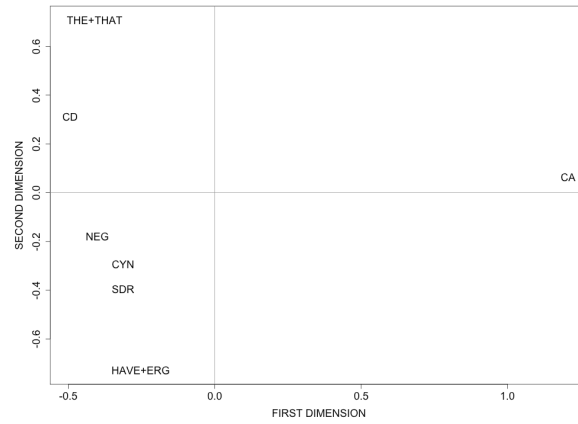
	CA	CD	SDR	NEG	CYN	EXPL-T	CMPR-IF	HAVE+ERG	THE+THAT	GO-GET
CA	0.00	11.40	10.20	10.63	10.20	10.05	10.72	10.39	11.09	10.86
CD	11.40	0.00	7.35	6.08	6.78	8.31	8.54	7.35	6.40	8.49
SDR	10.20	7.35	0.00	4.80	5.10	4.36	4.80	5.66	7.14	5.29
NEG	10.63	6.08	4.80	0.00	5.92	6.16	6.63	6.40	6.93	6.56
CYN	10.20	6.78	5.10	5.92	0.00	5.92	6.24	5.66	6.86	6.00
EXPL-T	10.05	8.31	4.36	6.16	5.92	0.00	4.47	6.56	8.12	5.57
CMPR-IF	10.72	8.54	4.80	6.63	6.24	4.47	0.00	6.56	8.49	5.39
HAVE+ERG	10.39	7.35	5.66	6.40	5.66	6.56	6.56	0.00	8.19	6.78
THE+THAT	11.09	6.40	7.14	6.93	6.86	8.12	8.49	8.19	0.00	7.94
GO-GET	10.86	8.49	5.29	6.56	6.00	5.57	5.39	6.78	7.94	0.00

step #3: these (dis)similarities are then plotted in a low-dimensional (here: 3D) space:

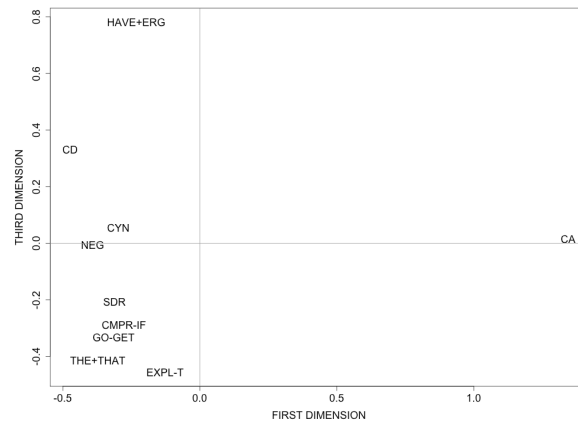


4 From statistics to linguistics: interpreting the results

FIRST AND SECOND DIMENSION

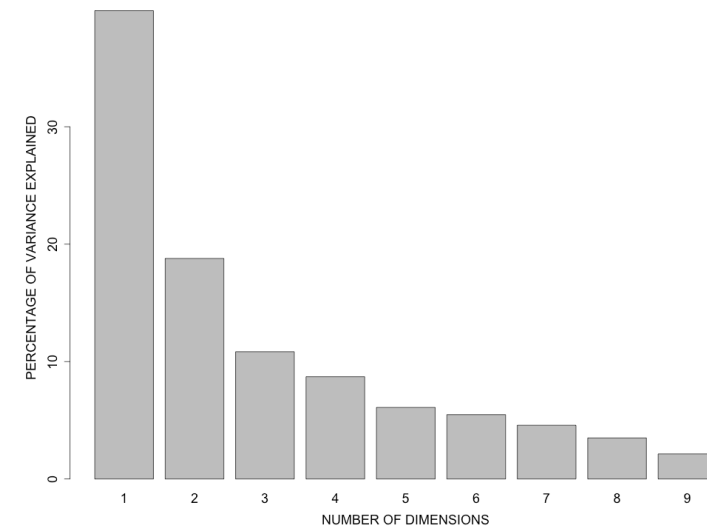


THIRD DIMENSION



- the **first dimension** sets **complementizer agreement (CA)** apart from all other phenomena
- the **second dimension** bundles **clitic doubling (CD)** and combinations of **determiner+ demonstrative (THE+THAT)** and sets them apart from the remaining phenomena
- the **third dimension** sets the **ergative auxiliary *have*** apart from the remaining phenomena

together the first three dimensions account for roughly 70% of the variance in the raw data set:



hypothesis: the data patterns unearthed by the CA-based analysis are epiphenomenal representations of underlying parametric choices → we identify four such parameters

4.1 FIRST PARAMETER: setting apart CA

- van Koppen (to appear) and references mentioned there: complementizer agreement is the overt reflex of unvalued ϕ -features on C undergoing Agree with the subject
- **supporting evidence:** the ϕ -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 des 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:**
 Dialects {have/don't have} unvalued ϕ -features on C.

4.2 SECOND PARAMETER: setting apart CD and THE+THAT

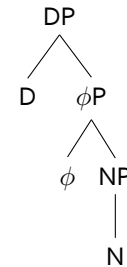
(13) *da-ze zaale lachen.*
 that-they_{CLITIC} they_{STRONG} laugh
 'that they are laughing.' (CD)

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

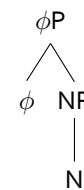
CD: van Craenenbroeck and van Koppen (2008)'s analysis of clitic doubling:

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

(15) strong pronoun



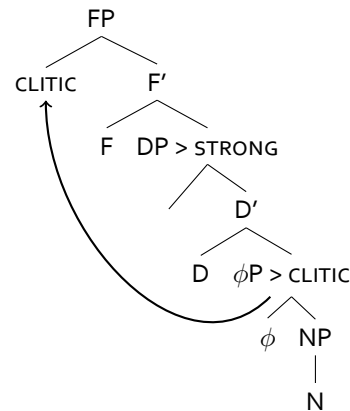
(16) subject clitic



- **step two:** a clitic-doubled subject starts life 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 ϕ P-movement into the extended left periphery of the DP (see Szabolcsi (1994), Aboh (2004), Giusti (1996) among many 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 ϕ P is spelled out as a subject clitic, while the the DP is realized as a strong pronoun

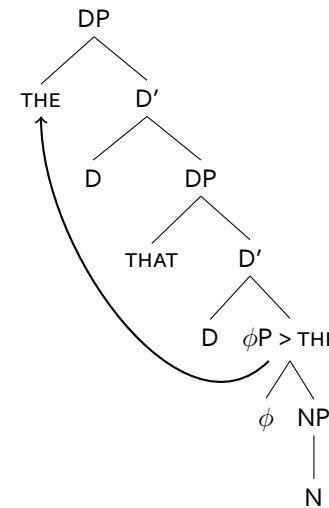
THE+THAT: Barbiers et al. (2015) argue for a similar big DP+movement-analysis

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

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

- **step two:** ϕ 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 {has/does not have} an extended left periphery.

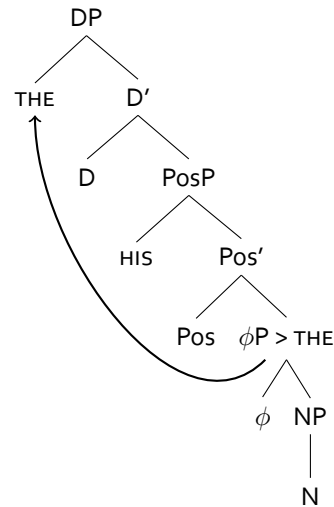
Supporting evidence from possessive structures:

1. dialects with a negative setting of 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 of the D-parameter) do have DE+POSS(ESSOR) (see Corver and van Koppen (2010))

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

(Rotterdam)

(22)



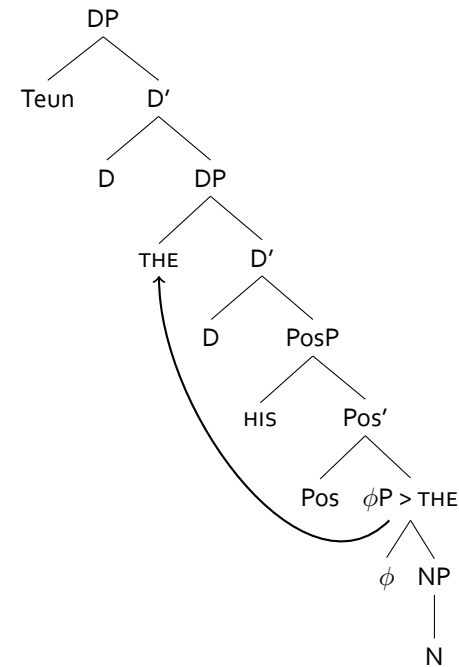
3. however, only dialects with a positive setting of the D-parameter allow doubling in THE+POSS:

(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:

(25)



4.3 THIRD PARAMETER: linking CYN/NEG/SDR/EXPL-T/CMPR-IF/GO GET

(26) A: *E slaapt niet.* B: *E doet.*
 he sleeps not he does
 'A: He's not sleeping. B: Yes, he is.' (SDR)

(27) *Ken goa nie naar schole.*
 I NEG go not to school
 'I'm not going to school.' (NEG)

(28) 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)

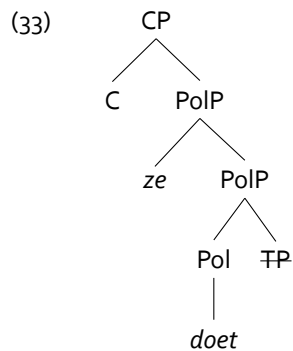
- (29) *T en goa niemand nie dansn.*
 it NEG goes no.one not dance
 'There will be no dancing.'
 (EXPL-T)
- (30) *Zie peist daj eer ga thuis zijn of ik.*
 she thinks that.you sooner go home be if I
 'She thinks you'll be home sooner than me.'
 (CMPR-IF)
- (31) *Gon haalt die bestelling ne keer!*
 go_{INF} get_{IMP} that order a time
 'Go get that order!'
 (GOGET)

4.3.1 NEG/CYN/SDR

NEG: van Craenenbroeck (2010): the negative clitic *en* occupies a high Pol-head in the left periphery

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:

- (32) *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:

- (34) *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

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

- (35) 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.'

(36) **the C-parameter (FIRST VERSION)**
 The CP-domain {has/does not have} a PolP.

4.3.2 EXPL-T

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

– Dialects with EXPL-T

- (37) a. *T zyn gisteren drie studenten gekomen.*
 it are yesterday three students come

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

– Dialects without EXPL-T

- (38) 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:

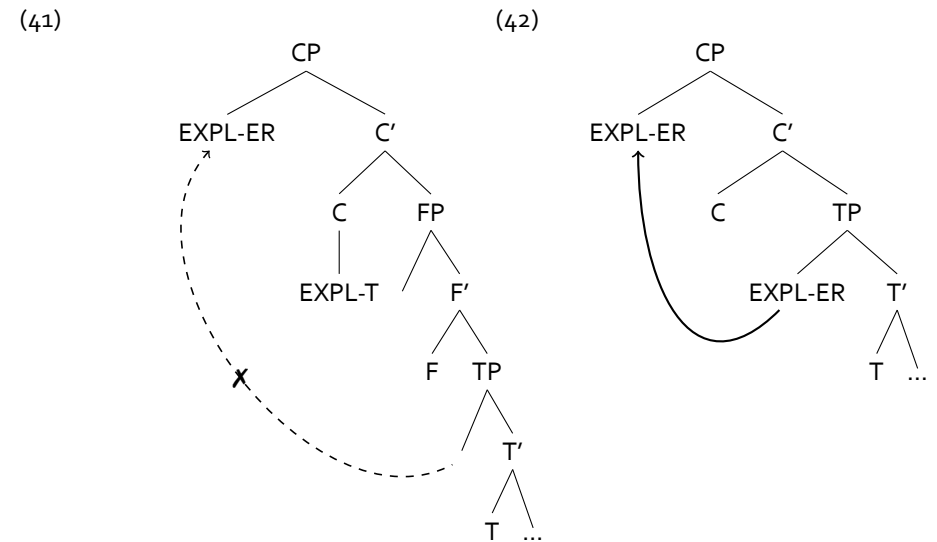
- EXPL-T is a main clause complementizer/particle much like Breton *bez* or Welsh *fe*: (i) these are also disallowed in embedded clauses and inverted main clauses; (ii) they also do not trigger agreement on the verb

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

- (40) *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

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



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

4.3.3 CMPR-IF & GO-GET

GO-GET:

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

(44) *Gon haalt die bestelling ne keer!*
 go_{INF} get_{IMP} that order a time
 'Go get that order!' (GO-GET)

(45) *Komen eet maar al gauw want 't is gereed!*
 come_{INF} eat_{IMP} PART PART fast because it is ready
 'Come and eat quickly, because it is ready!' (COME-EAT)

- they appear to be functional, grammaticalized discourse particles rather than 'real' lexical verbs, i.e. functional items rather than lexical ones (see Abney (1987), Hopper and Traugott (1993)):

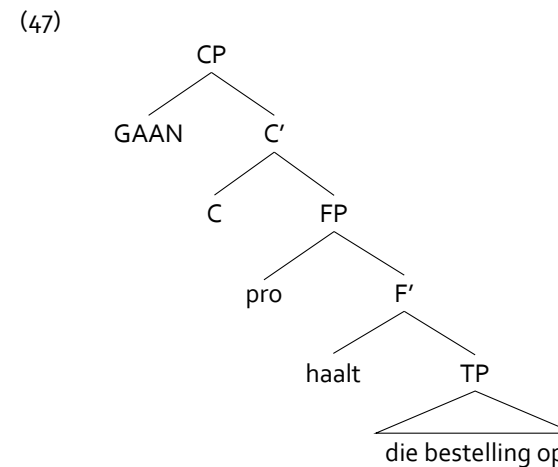
- functional items have a semantically bleached meaning
 - GO/COME appear to be semantically bleached (but more research is necessary), i.e. there does not seem to be a real going or coming event:

(46) *Gaan kijkt e keer oe late dat es!*
 go see one time how late that is
 'See what time it is.'

- functional items form a closed class
 - GO and COME are the only verbs that can be used in this way
- functional items can be morphologically defective
 - GO and COME appear only in their infinitival form and only in imperative clauses
 - Benjamin (2010), Waltereit and Detges (2007), van Craenenbroeck and van Koppen (2013): discourse markers are typically derived from imperatives

	Functional elements	COME/GO
bleached meaning	+	+?
closed class	+	+
morphological defectiveness	+	+

- the dialects that allow grammaticalization of GO and COME into discourse particles might have an additional CP-layer to host this particle; in dialects without this additional layer specCP is occupied by the *pro*-subject.

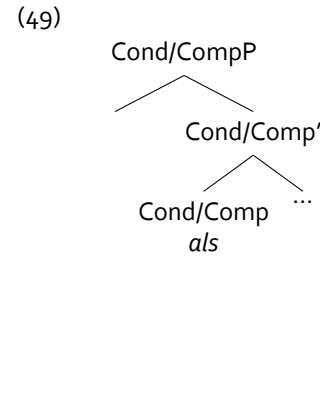
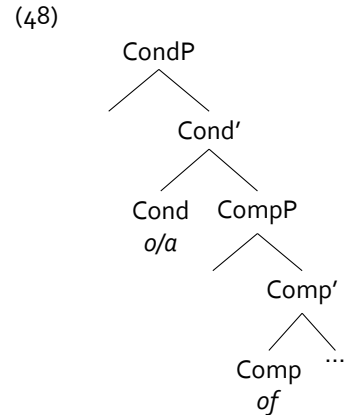


CMPR-IF:

- 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
conditional	o/a	os/as	as	als
comparative	of	of	as	als

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



4.3.4 Summary

- CYN, NEG, SDR, EXPL-T, CMPR-IF, GO GET all point in the same direction: the dialects that display these phenomena have an extended left periphery.

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

4.4 FOURTH PARAMETER: HAVE-ERG

(51) *Ken noa de markt geweest.*
I have to the market been
'I've been to the market.'

(HAVE-ERG)

- *have* is more complex than *be*:
 - Kayne (1993) has argued that *have* incorporates an additional preposition: *have* = *be* + P
 - alternatively, Benveniste (1960), Hoekstra (1996) have argued that *have* has an additional accusative case position: *have* = *be* + ACC
 - Schoorlemmer (2007) argues that these insights should be implemented in the current theory as *have* = *be* + *v*

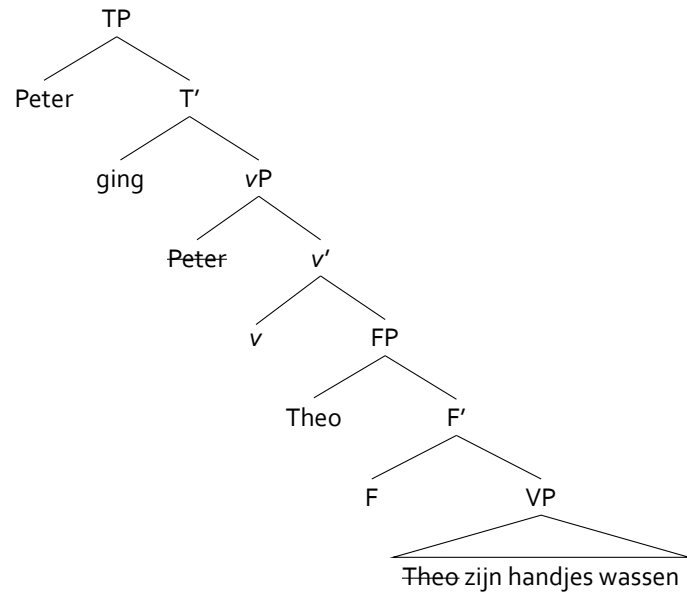
→ if *have* = *be* + *v* then dialects with HAVE-ERG have an additional vP-layer:

(52) **the v-parameter**
The vP-domain {has/does not have} an extended periphery.

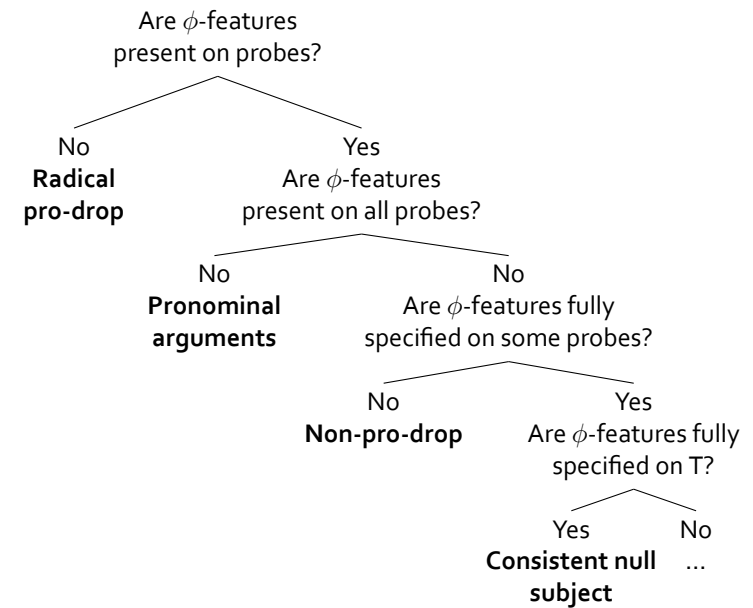
- **additional support** for more space in the vP-periphery comes from external possession (data from Buelens (2016):
 - (53) *Peter ging Theo toen juste zijn handjes wassen.*
Peter went Theo then exactly his hands wash
'Peter was going to wash Theo's hands just then.'
- the external possessor construction occurs in the same area as HAVE-ERG (Buelens and D'Hulster (2014)).
- interestingly, Buelens (2016) shows that the external possessor moves from the possessive DP to a designated position within the vP-periphery.

→ we take this to mean that the external possessor can only move in the dialects with an extended vP-domain, since only in these dialects is there a landing site for this element.

(54)



(55)



5 The bigger picture: parameter interaction & parameter hierarchies

note: the four parameters introduced above seem to be of different types: the AgrC-parameter is about the presence/absence of a specific unvalued feature on a specific functional head, while the other three 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)

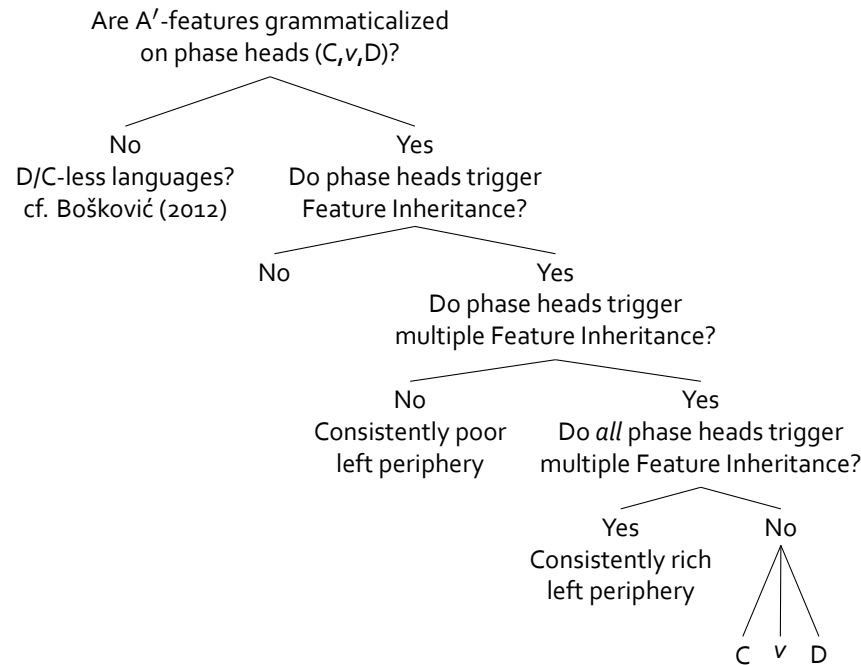
AGRC-PARAMETER: represents a choice point at some (relatively low) point in the null argument hierarchy of Biberauer et al. (2014):

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

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

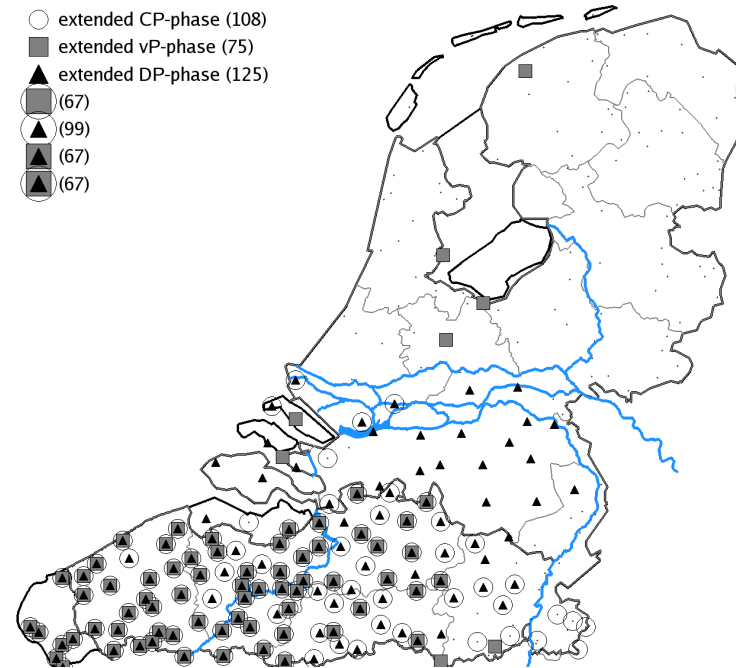
D/C/V-PARAMETERS: we propose these parameters constitute choice points in a single parameter hierarchy regulating the grammaticalization of A'-features on phase heads and their surrounding projections → we implement the variation as a parametrization of Feature Inheritance (Chomsky (2007), cf. also Ouali (2008), van Craenenbroeck and van Koppen (2007))

(57)



note: missing from this hierarchy is the possibility of Feature Inheritance being parametrized according to types of features, cf. Miyagawa (2010), Jiménez-Fernández and Miyagawa (2014) → this might instantiate the 'No'-option at the second level

→ with this in mind we can explore the interaction between the three parameters in our dataset:



- there is a consistent area (the Dutch province of North Brabant) with an extended nominal left periphery, but not a clausal or verbal one
 - there is a more or less consistent area (the Belgian provinces of Brabant and Antwerp) that have an extended periphery at the clausal and nominal level, but not at the verbal one
 - there is no dialect that has an extended left periphery at the clausal and verbal, but not at the nominal level
- this tentatively suggests that there might be more structure at the bottom parts of the hierarchy than is suggested by the structure in (57): a negative choice for the D-parameter implies a negative choice for either the C- or the v-parameter

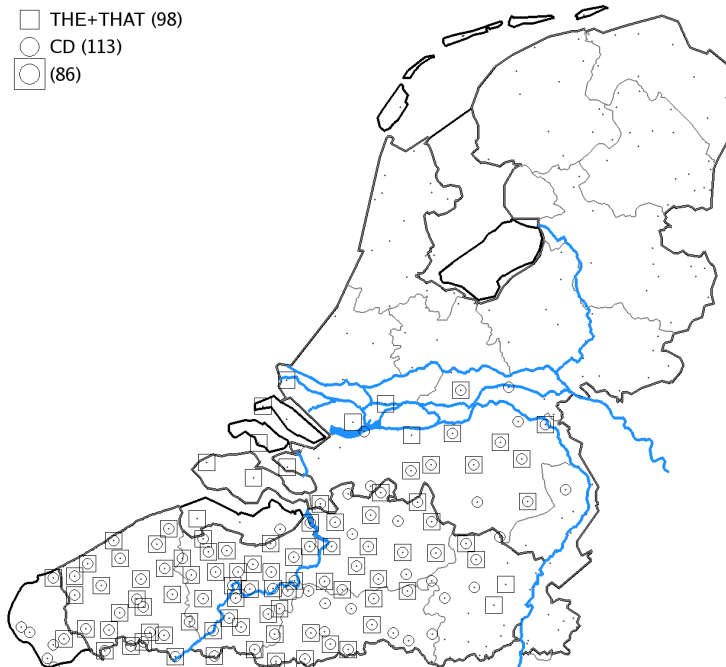
6 The smaller picture: nanovariation

recall: while the v-parameter is based on a single linguistic feature (*have*-auxiliary in ergatives), the D- and C-parameters are based on multiple such features (two and six respectively)

question: what is the internal consistency of the D- and C-parameters? to what extent is the microlevel variation further muddled by nanoparametric differences?

D-PARAMETER

- THE+THAT (98)
- CD (113)
- ⊖ (86)



- on the whole, the geographic overlap between the two phenomena is sub-

stantial, with limited amounts of 'fraying' at the edges of the core area

- the only exception seems to be the Dutch province of Zeeland, which consistently shows THE+THAT, but lacks any form of CD
- interestingly, Barbiers et al. (2016) argue about precisely this phenomenon in this area that it does not represent a genuine, productive case of demonstrative doubling, but rather a lexicalized substantive pronoun that merely has the appearance of demonstrative doubling:

North Brabant demonstrative doubling

- (58) 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)
- (59) 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

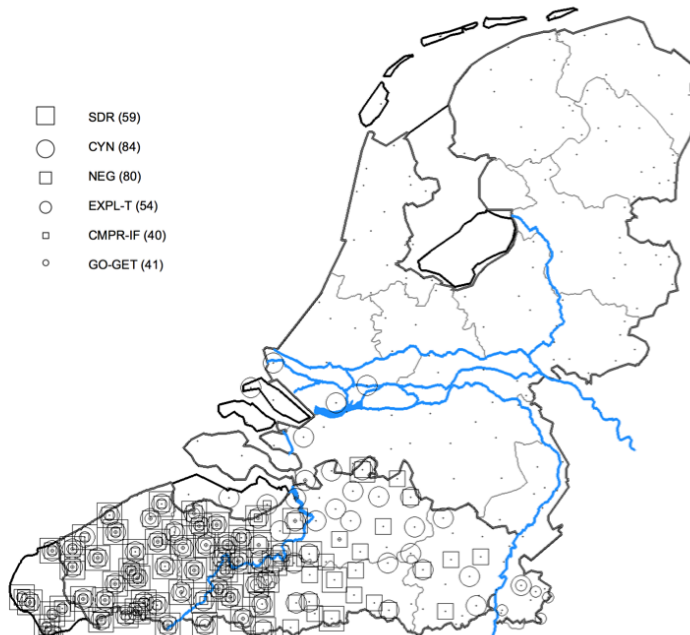
Zeeland demonstrative doubling

- (60) 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)

- (61) 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

C-PARAMETER



- here, the variation is more systematic than in the case of the D-parameter: while in French/West/East Flanders all six phenomena are well represented, the positive setting of the C-parameter in Brabant, Antwerp, and Limburg is typically restricted to SDR, CYN, and/or NEG

→ two options:

1. the real cutoff point for the C-parameter is Flanders, and the limited use of SDR/CYN/NEG represent lexicalized remnants (nanovariation)

- (62) A: *IJ zal nie komen.* B: *Toetoe ij komt nog wel*
 he will nog come it.does.it.does he comes PRT AFF
 'A: He's not going to come. B: Sure he will.' (Meer)

2. the C-parameter needs to be subdivided into two subparameters: SDR/CYN/NEG signal the presence of a left-peripheral Pol-head, while EXPL-T/CMPR-IF/GO-GET signal the presence of an even higher C-head (cf. van Craenenbroeck and van Koppen (2007) on multiple phase boundaries in the clausal left periphery)

7 Summary

- 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, and EXPL-T) reduce to four parameters: CA-parameter, C-parameter, D-parameter, v-Parameter
- the C/D/v-parameters form part of the same parameter hierarchy, whereas the CA-parameter is part of a different one

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