

# The Morphosyntax of Upward Agreement and Downward Agreement

## Part I: Introduction and Overview

Anke Himmelreich

`himmelreich@lingua.uni-frankfurt.de`

EGG 2021

August 02, 2021

# Table of Contents

1 Agree and its directionality

2 Overview of phenomena

3 Schedule of this course

## 1 Agree and its directionality

- Agreement in natural language
- Implementing agreement in syntactic theories
- Summary of important terminology
- The direction of Agree

- 1 Agree and its directionality
  - Agreement in natural language
  - Implementing agreement in syntactic theories
  - Summary of important terminology
  - The direction of Agree

# Agreement as a form of argument encoding I

Three basic forms of argument encoding in natural languages:

- case marking of arguments
- fixed positions for arguments
- predicate agreement with arguments

## Subject-Verb-Agreement (SVA, German)

- (1) a. Ich<sub>1sg</sub> kauf\*t<sub>3sg</sub>/✓e<sub>1sg</sub> Brot.  
I buy bread
- b. Er<sub>3sg</sub> kauf\*e<sub>1sg</sub>/✓t<sub>3sg</sub> Brot.  
He buys bread

## Object-Verb-Agreement (Northern Ostyak, Nikolaeva (1999))

- (2) a. ma tām kălan wel-s-∅-em  
I this reindeer kill-T-SG-1 SG  
'I killed this reindeer.'
- b. ma tām kălan wel-sǝ-l-am  
I these reindeer kill-T-PL-1 SG  
'I killed these reindeer.'

### Question

Where is the marker for object agreement?

# Abstract view on agreement

## What is agreement? – Abstraction Level 1

The surface form of the verb in a given clause depends on the properties of its arguments.

# Abstract view on agreement

## What is agreement? – Abstraction Level 1

The surface form of the verb in a given clause depends on the properties of its arguments.

## What is agreement? – Abstraction Level 2

The surface form of one element in a given linguistic expression depends on the properties of another element in this expression.



# Abstract view on agreement

## What is agreement? – Abstraction Level 1

The surface form of the verb in a given clause depends on the properties of its arguments.

## What is agreement? – Abstraction Level 2

The surface form of one element in a given linguistic expression depends on the properties of another element in this expression.

## What is agreement? – Abstraction Level 3

The properties of one element in a given linguistic expression depend on the properties of another element in this expression.

- 1 **Agree and its directionality**
  - Agreement in natural language
  - **Implementing agreement in syntactic theories**
  - Summary of important terminology
  - The direction of Agree

(Chomsky 1965:174f.):

“[...], rules of agreement clearly belong to the **transformational component** [...], and these rules add to Phrase-markers specified features that enter into particular formatives, dominating their phonological matrices. ...

$$(3) \quad \text{Article} \rightarrow \begin{bmatrix} \alpha & \text{Gender} \\ \beta & \text{Number} \\ \gamma & \text{Case} \end{bmatrix} / \dots \begin{bmatrix} + & \text{N} \\ \alpha & \text{Gender} \\ \beta & \text{Number} \\ \gamma & \text{Case} \end{bmatrix}$$

# Agreement phenomena in Transformational Grammar of the 70s II

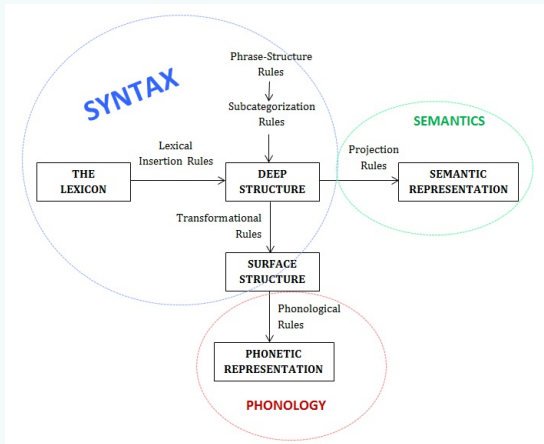


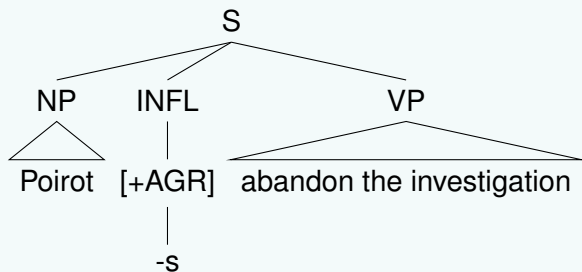
Figure 1: Grammar Model of TG<sup>1</sup>

6

<sup>1</sup>By Zaheen - Own work, CC BY-SA 4.0,  
<https://commons.wikimedia.org/w/index.php?curid=51406587>

Chomsky (1981), (Haegeman 1994:112):

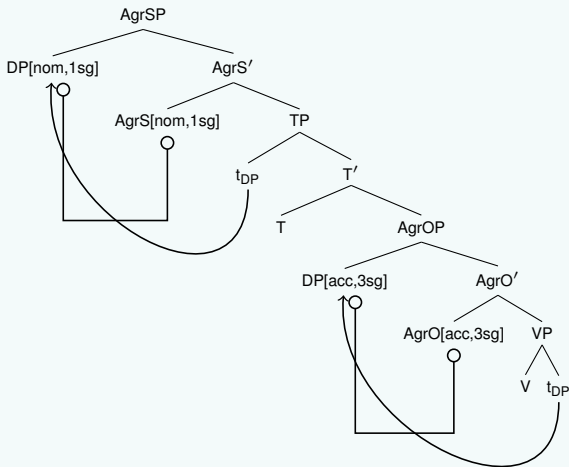
(4)



# Agreement phenomena in Agreement in Early Minimalism

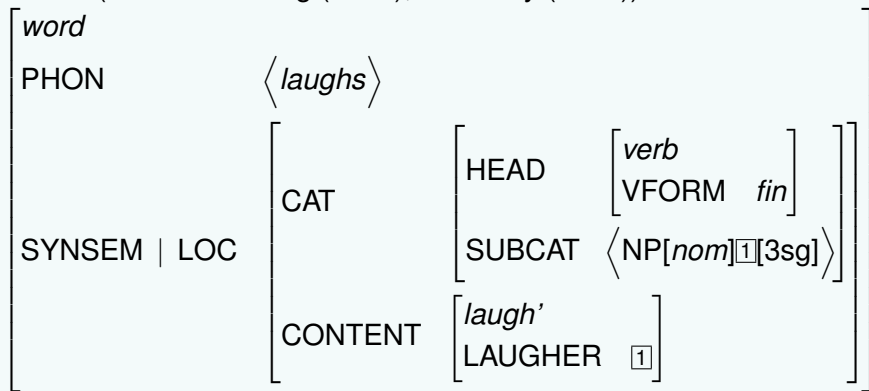
Case assignment and agreement as two sides of the same coin:  
Feature Checking by movement (cf. Chomsky (1995))

(5)



# Agreement in representational frameworks

HPSG (Pollard and Sag (1994); De Kuthy (2010))



# Agree(ment) in Minimalism I

Chomsky (2000, 2001):

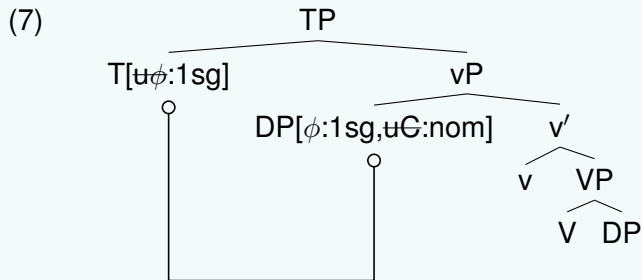
- Movement and feature identity requirements (checking) are separated
- Operation Agree: Valuation of a previously unvalued feature (Probe) by a valued feature of the same kind (Goal)



## Agree(ment) in Minimalism II

- (6) Definition (Richards (2008)): **Agree**(P[robe],G[goal]) if
- P c-commands G (**direction condition**)
  - P and G are active (activity condition)
  - P matches G for feature F (matching condition)
  - G is interpretable (= valued) for F (interpretability condition)
- ... with the result that...
- P values and deletes uF on G (if P is  $\phi$ -complete);  
(maximization principle)
- G values and deletes uF on P

# Agree(ment) in Minimalism III



# Agree(ment) in Minimalism IV

## Dividing Agree into two operations:

Matching and Valuation (Bhatt and Walkow (2013:973)), Agree-Link and Agree-Copy (Arregi and Nevins (2012)):

- allows mismatches of syntactic dependency and agreement value
- potentially allows other operations to happen in between checking and valuation (e.g. lowering, see Arregi and Nevins (2013))

## Question

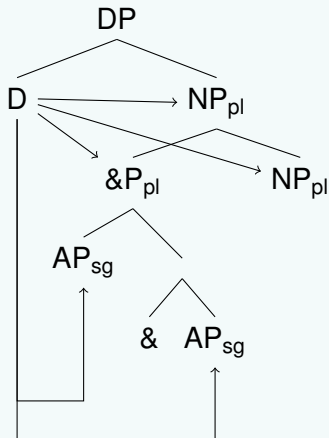
What is special about the definite article?

### (8) **Bulgarian coordination**

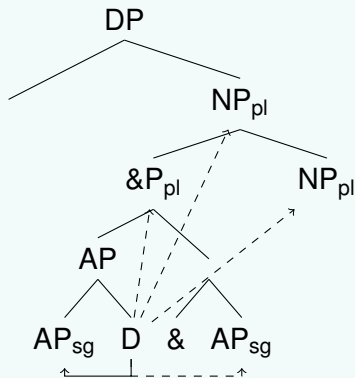
- a. balgarskij-**a**                      i      ruski  
Bulgarian.MASC.SG-**DEF.SG** and Russian.MASC.SG  
narod-i  
nation.MASC.**PL**  
'the Bulgarian and Russian nations'  
(=the Bulgarian nation and the Russian nation)

# Agree(ment) in Minimalism VI

## b. Syntax: Agree-Link



## c. Post-Syntax: Lowering and Agree-Copy



- 1 **Agree and its directionality**
  - Agreement in natural language
  - Implementing agreement in syntactic theories
  - **Summary of important terminology**
  - The direction of Agree

# Terminology

- agreement controller:** element that some other element's properties depend on (e.g. the subject in SVA)
- agreement target:** element that depends on some other element's properties (e.g. the verb in SVA)
- probe:**  $\approx$  agreement target
- goal:**  $\approx$  agreement controller
- downward Agree:** Agree where the probe c-commands the goal (e.g. T Agreeing with the subject in Spec-vP)
- upward Agree:** Agree where the probe is c-commanded by the goal
- downward valuation:**  $\approx$  upward Agree
- upward valuation:**  $\approx$  downward Agree



- 1 **Agree and its directionality**
  - Agreement in natural language
  - Implementing agreement in syntactic theories
  - Summary of important terminology
  - **The direction of Agree**

# Why downward Agree? I

- **Computational simplicity** : Instead of scanning the entire tree, the search for a suitable goal is limited to a part of the structure; by the time the probe is merged, it only “sees” its sister, other elements that will be merged higher up in tree are not visible yet (cf. *Earliness*, Pesetsky (1989); Řezáč (2004))

# Why downward Agree? I

- **Computational simplicity(?)**: Instead of scanning the entire tree, the search for a suitable goal is limited to a part of the structure; by the time the probe is merged, it only “sees” its sister, other elements that will be merged higher up in tree are not visible yet (cf. *Earliness*, Pesetsky (1989); Řezáč (2004))

## Comment

The limitation to configurations where the goal is lower in the structure than the probe does not necessarily lead to a simpler search, especially not in cases where the probe is very high in the structure. The Earliness Principle does only predict a preference for the direction of Agree which comes with the bottom-up nature of minimalist derivations.

## Why downward Agree? II

- **Empirical adequacy** : Probes cannot take any suitable goal, certain configurational conditions need to be met.

- (9)
- a. While Peter is reading a book, I am/\*is watching a movie.
  - b. Peter, I have/\*has seen yesterday.

## Why downward Agree? II

- **Empirical adequacy(?)**: Probes cannot take any suitable goal, certain configurational conditions need to be met.

- (9)
- While Peter is reading a book, I am/\*is watching a movie.
  - Peter, I have/\*has seen yesterday.

### Comment

(9-a) only shows that c-command between probe and goal must be given. The ungrammatical version of (9-b) is excluded by timing of operations (aka Earliness). There are a lot of cases of prima facie agreement that can better be explained by upward Agree.

# Why downward Agree? III

## Conclusion

The direction condition of Agree is up for discussion.

# Different stands on the direction condition

- **Only Downward Agree** (e.g. Chomsky (2000))
- **Only Upward Agree** (e.g. Zeijlstra (2012))
- **Direction depends on configuration** (heads, features, languages) (e.g. Baker (2008))
- **Both directions with preference for upward Agree** (e.g. Chomsky 1986:24-27, Kayne 1989, Koopman 1992:557, Koopman 2006, Chomsky 1995:149, Assmann et al. 2015:357, Bjorkman and Zeijlstra 2019)
- **Both directions with preference for downward Agree** (e.g. Béjar and Āezáč (2009), Himmelreich (2017))
- **Both directions with no preference** (???, allowed potentially in representational accounts)

# Different arguments

- **Yes to Downward Agree:** There is Downward Agree. If there were no Downward Agree, a certain set of data could not be derived.
- **Yes to Upward Agree:** There is Upward Agree. If there were no Upward Agree, a certain set of data could not be derived.
- **No to Downward Agree:** There is no Downward Agree. If there were Downward Agree, a certain set of data could not be derived.
- **No to Upward Agree:** There is no Upward Agree. If there were Upward Agree, a certain set of data could not be derived.



# A bidirectional Agree operation I

Himmelreich (2017):

- The search operation of Agree keeps on scanning the tree as long as there is no goal found. The best case scenario is one where only one node needs to be checked. The worst case scenario is one where the entire tree needs to be scanned. This is equivalent to the Chomskyan approach.
- Earliness holds for the probe feature as long as it is unchecked.
- Due to the bottom-up nature of derivations, the search will always be initiated in the c-command domain, giving rise to a preference for Downward Agree.

# Consequences

- The bidirectional Agree operation allows for more agreement configurations than a unidirectional Agree operation.
- The preference for Downward Agree that comes with the bottom-up nature of derivations will rule out a lot of unwanted configurations.

# Research Questions

- What are the empirical data telling us?
- Is one or the other definition of Agree conceptually superior?
- Can upward and downward agreement phenomena be classified in a strict way, or is there at least a tendency?
- If so, in what way can the agreement types be classified (e.g. according to affected features, according to superficiality, according to languages)?
- Are there further general differences between upward agreement and downward agreement (e.g. with respect to locality, with respect to properties of the probe and goal)?

- 2 Overview of phenomena
  - Subject-verb agreement asymmetries
  - Other  $\phi$ -agreement asymmetries
  - Asymmetries in non- $\phi$ -agreement

## 2 Overview of phenomena

- Subject-verb agreement asymmetries
- Other  $\phi$ -agreement asymmetries
- Asymmetries in non- $\phi$ -agreement

## Question

What do you note?

- (10) a.    ʔal-ʔawlaad-u    naam-uu/\*naam-a.  
          the-children-NOM slept-3PL/\*slept-MASC.3SG  
          ‘The children slept.’
- b.    naam-a/\*naam-uu            l-ʔawlaad-u.  
          slept-MASC.3SG/\*slept-3PL the-children-NOM  
          ‘The children slept.’
- (11) a.    t-taalibaat-u                    ʔakal-na/\*ʔakal-at  
          the-student.FEM.PL-NOM ate-FEM.3PL/\*ate-FEM.3SG  
          ‘The students ate.’
- b.    ʔakal-at/\*ʔakal-na            t-taalibaat-u  
          ate-FEM.3SG/\*ate-FEM.3PL the-student.FEM.PL-NOM  
          ‘The students ate.’

Aoun et al. (1994), Benmamoun and Lorimor (2006), Bjorkman and Zeijlstra (2014), Preminger (2015)

## Question

What do you note?

- (12)
- a. Levrioù a lennont.  
books PART read.3PL  
'They read books.'
  - b. Levrioù a lenn/\*lennont ar vugale.  
books PART read/\*read.3PL the children  
'The children read books.'
  - c. Ar vugale a lenn/\*lennont levrioù.  
the children PART read/\*read.3PL books  
'The children read books.'
- (13)
- a. Ne lenn/\*lennont ket ar vugale levrioù.  
PART read/\*read.3PL not the children books  
'The children do not read books.'
  - b. Ar vugale ne lennont/\*lenn ket levrioù.  
the children PART read.3PL/\*read not books  
'The children do not read books.'

## 2 Overview of phenomena

- Subject-verb agreement asymmetries
- Other  $\phi$ -agreement asymmetries
- Asymmetries in non- $\phi$ -agreement



# First vs. Last Conjunct Agreement

## Question

What do you note?

- (14) a. Juče su uništena sva sela i  
yesterday are destroyed.PL.NEUT all villages.NEUT and  
sve varošice.  
all towns.FEM  
'All villages and all towns were destroyed yesterday.'
- b. Sva sela i sve varošice su (juče)  
all villages.NEUT and all towns.FEM are yesterday  
uništene.  
destroyed.PL.FEM

Bošković (2009), Koppen (2006)

# Specificational Clauses in Kinande I

- (15) *ISC: full downward agreement with XPs*
- a. [ebyalya ebyo nyanzire kutsibu] w' amatimo  
8food 8that 1s.like strongly 6COP 6bananas  
'The food that I like best is BANANAS.'
- b. émbugá l' ólúhi  
9problem 11COP 11war  
'The problem is the WAR.'
- (16) *ISC: no agreement with names or pronouns*
- a. Omugalimu ni/\*yo Kambale  
aug.1teacher is/1COP 1Kambale  
'The teacher is Kambale.'
- b. eprobleme ni ingye  
aug.9problem NI 1st person pronoun  
'The problem is me.'

## Specificational Clauses in Kinande II

- (17) *RSC: full agreement with XPs, names and pronouns*
- a. oluhi lo mbuga  
11war 11FOC 9problem  
'The WAR is the problem.'
  - b. Kambale yo mugalimu  
1Kambale 1is 1teacher  
'KAMBALE is the teacher.'
  - c. ingye ∅ mbuga  
I 9problem  
'I am the problem.'

Schneider-Zioga (2016)

# Complementizer Agreement

## Question

What do you note?

(18) Limbum

- a. yì kwàcí yí-nemámá bí vù  
2PL think 2PL-COMP grandmother FUT1 come  
'You think that the grandmother will come.'
- b. mámá kwàcí í-neyì bí vù  
2PL think 3SG-COMP grandmother FUT1 come  
'You think that the grandmother will come.'

(19) West Flemish

- a. k peinzen da-n die venten Marie kenn-en  
I think that-PL those guys Marie know-PL  
'I think that those guys know Marie.'
- b. k peinzen da dienen vent Marie kenn-t  
I think that-SG that guy Marie know-SG  
'I think that that guy knows Marie.'

## Question

What do you note?

- (20)
- a. Only you did your/\*her best.
  - b. I am the only one who takes care of her/my son.
- (21)
- a. Nur ich habe mein/\*ihr Bestes gegeben.  
only I have my/her best given
  - b. Ich bin der einzige, der seinen/\*meinen Sohn  
I am the only who his/\*my son  
versorgt.  
takes.care.of

Wurmbrand (2017)

- 2 Overview of phenomena
  - Subject-verb agreement asymmetries
  - Other  $\phi$ -agreement asymmetries
  - Asymmetries in non- $\phi$ -agreement

# Case in Greek Free Relatives

## Question

What do you note?

- (22) a. to vravío tha to pári ópjos / \*ópjon  
the price FUT CL take3SG<sub>nom</sub> who<sub>nom</sub> / who<sub>acc</sub>  
epiléksume  
choose-1PL<sub>acc</sub>  
'The price will be awarded to whoever we choose.'
- b. ópjos / ópjon epiléksume tha to pári  
who<sub>nom</sub> / who<sub>acc</sub> choose-1PL<sub>acc</sub> FUT take-3SG<sub>nom</sub> the  
to vravío  
price  
'Whoever we may choose, he will get the price.'

Spyropoulos (2011), Himmelreich (2017)

## Question

What do you note?

- (23) a. ?John didn't eat nothing.  
b. ??Nobody didn't eat.

Blanchette (2016), Zeijlstra (2004)



## 3 Schedule of this course

# Schedule

- Part I (August 02): Introduction, overview
- Part II (August 03): Background literature
- Part III (August 04): Differences between upward and downward agreement according to the literature, SVA in Arabic
- Part IV (August 05): Complementizer agreement?, fake indexicals?, more on SVA in other languages?, negative concord?
- Part V (August 06): First and last conjunct agreement, summary

# References I

- Anderson, Stephen R. (2000): Verb-Second and Clause Structure in Breton. Ms., Yale University (presented at the Third Celtic Linguistics Conference).
- Aoun, Joseph, Elabbas Benmamoun and Dominique Sportiche (1994): 'Agreement, Word Order, and Conjunction in Some Varieties of Arabic', *Linguistic Inquiry* **25**, 195–220.
- Arregi, Karlos and Andrew Nevins (2012): *Morphotactics: Basque Auxiliaries and the Structure of Spellout*. Springer, Dordrecht.
- Arregi, Karlos and Andrew Nevins (2013): Contextual neutralization and the Elsewhere Principle. In: O. Matushansky and A. Marantz, eds, *Distributed Morphology Today: Morphemes for Morris Halle*. MIT Press, Cambridge, MA, pp. 199–221.
- Assmann, Anke, Doreen Georgi, Fabian Heck, Gereon Müller and Philipp Weisser (2015): 'Ergatives Move Too Early: On an Instance of Opacity in Syntax', *Syntax* **18**(4), 343–387.
- Baker, Mark C. (2008): *The Syntax of Agreement and Concord*. Cambridge University Press.
- Béjar, Susana and Milan Āezáč (2009): 'Cyclic Agree', *Linguistic Inquiry* **40**(1), 35–73.
- Benmamoun, Elabbas and Heidi Lorimor (2006): 'Featureless expressions: when morphophonological markers are absent.', *Linguistic Inquiry* **37**, 1–23.
- Bhatt, Rajesh and Martin Walkow (2013): 'Locating agreement in grammar: an argument from agreement in conjunctions', *Natural Language and Linguistic Theory* **31**, 951–1013.
- Bjorkman, Bronwyn and Hedde Zeijlstra (2014): Upward Agree is superior. Ms., lingbuzz/002350.
- Bjorkman, Brownwyn and Hedde Zeijlstra (2019): 'Checking Up on (Phi-)Agree', *Linguistic Inquiry* **50**, 527–569.
- Blanchette, Frances (2016): 'Subject-Object Asymmetries in English Sentences with Two Negatives', *Penn Working Papers in Linguistics* **22**(1), 41–50.
- Borsley, Robert D. and Janig Stephens (1989): 'Agreement and the position of subject in Breton', *Natural Language and Linguistic Theory* **7**, 407–427.
- Bošković, Željko (2009): 'Unifying first and last conjunct agreement', *Natural Language and Linguistic Theory* **27**, 455–496.
- Chomsky, Noam (1965): *Aspects of the Theory of Syntax*. MIT Press, Cambridge.
- Chomsky, Noam (1981): *Lectures on Government and Binding: The Pisa Lectures*. 7 edn, Mouton de Gruyter, Berlin.

# References II

- Chomsky, Noam (1986): *Barriers*. Vol. 13 of *Linguistic Inquiry Monograph*, MIT Press, Cambridge, Massachusetts.
- Chomsky, Noam (1995): *The Minimalist Program*. MIT Press, Cambridge, Massachusetts.
- Chomsky, Noam (2000): Minimalist Inquiries: The Framework. In: R. Martin, D. Michaels and J. Uriagereka, eds, *Step by Step. Papers in Minimalist Syntax in Honor of Howard Lasnik*. MIT Press, Cambridge, chapter 3, pp. 89–155.
- Chomsky, Noam (2001): Derivation by Phase. In: M. Kenstowicz, ed., *Ken Hale: A Life in Language*. MIT Press, Cambridge, Massachusetts, pp. 1–52.
- De Kuthy, Kordula (2010): Introduction to HPSG: Agreement. Ms., Eberhard-Karls-Universität Tübingen, Lecture Notes.
- Haegeman, Liliane (1994): *Introduction to Government and Binding Theory*. 2 edn, Blackwell Publishing, Oxford.
- Haegeman, Liliane and Marjo van Koppen (2012): 'Complementizer Agreement and the Relation between  $C^0$  and  $T^0$ ', *Linguistics Inquiry* **43**, 441–451.
- Himmelreich, Anke (2017): Case Matching Effects in Free Relatives and Parasitic Gaps: A Study on the Properties of Agree. PhD thesis, Universität Leipzig.
- Kayne, Richard (1989): Facets of participle agreement in Romance. In: P. Benincà, ed., *Dialect variation and the theory of grammar*. Foris, Dordrecht, pp. 85–104.
- Koopman, Hilda (1992): 'On the absence of case chains in Bambara', *Natural Language & Linguistic Theory* **10**, 555–594.
- Koopman, Hilda (2006): Agreement Configurations: In Defense of "Spec Head". In: C. Boeckx, ed., *Agreement Systems*. John Benjamins, Amsterdam, pp. 159–200.
- Koppen, Marjo van (2006): 'One Probe, Multiple Goals: The Case of First Conjunct Agreement', *Special Issue of Leiden Papers in Linguistics* **3(2)**, 25–52.
- Nformi, Jude (2017): Complementizer Agreement and Intervention Effects. Ms. Universität Leipzig.
- Nikolaeva, Irina (1999): 'Object Agreement, Grammatical Relations, and Information Structure', *Studies in Language* **23(2)**, 331–376.
- Pesetsky, David (1989): Language-Particular Processes and the Earliness Principle. Ms., MIT.
- Pollard, Carl and Ivan A. Sag (1994): *Head driven Phrase Structure Grammar*. University of Chicago Press, Chicago.

# References III

- Preminger, Omer (2015): Upwards and onwards: On the direction of valuation in phi-feature agreement. Talk at New York University.
- Řezáč, Milan (2004): Elements of Cyclic Syntax: Agree and Merge. PhD thesis, University of Toronto.
- Richards, Marc (2008): Quirky Expletives. In: R. d'Alessandro, G. H. Hrafnbjargarson and S. Fischer, eds, *Agreement Restrictions*. Mouton de Gruyter, Berlin, pp. 181–213.
- Schneider-Zioga, Patricia (2016): That's not how you agree, either: A contribution to the discussion on directionality of agreement. Ms, CSU Fullerton.
- Spyropoulos, Vassilios (2011): Case Conflict in Greek Free relatives: Case in Syntax and Morphology. In: A. Galani, G. Hicks and G. Tsoulas, eds, *Morphology and its Interfaces*. John Benjamins, Amsterdam, pp. 21–56.
- Stump, Gregory T. (1984): 'Agreement vs. Incorporation in Breton', *Natural Language and Linguistic Theory* **2**, 289–348.
- Wurmbrand, Susi (2017): Feature sharing or how I value my son. In: C. Halpert, H. Kotek and C. v. Urk, eds, *The Pesky Set: Papers for David Pesetsky*. MIT Working Papers in Linguistics, pp. 173–182.
- Zeijlstra, Hedde (2004): Sentential negation and negative concord. PhD thesis, University of Amsterdam.
- Zeijlstra, Hedde (2012): 'There is only one way to agree', *The Linguistic Review* **29**, 491–539.