Head-Driven Phrase Structure Grammar

The handbook

Edited by

Jean-Pierre Koenig Alakara

Empirically Oriented Theoretical Morphology and Syntax



Empirically Oriented Theoretical Morphology and Syntax

Chief Editor: Stefan Müller

Consulting Editors: Berthold Crysmann, Laura Kallmeyer

In this series:

- 1. Lichte, Timm. Syntax und Valenz: Zur Modellierung kohärenter und elliptischer Strukturen mit Baumadjunktionsgrammatiken
- 2. Bîlbîie, Gabriela. Grammaire des constructions elliptiques: Une étude comparative des phrases sans verbe en roumain et en français
- 3. Bowern, Claire, Laurence Horn & Raffaella Zanuttini (eds.). On looking into words (and beyond): Structures, Relations, Analyses
- 4. Bonami, Olivier, Gilles Boyé, Georgette Dal, Hélène Giraudo & Fiammetta Namer. The lexeme in descriptive and theoretical morphology.
- 5. Guzmán Naranjo, Matías. Analogical classification in formal grammar.

ISSN: 2366-3529

Head-Driven Phrase Structure Grammar

The handbook

Edited by

Stefan Müller

Anne Abeillé

Robert D. Borsley

Jean-Pierre Koenig



Müller, Stefan, Anne Abeillé, Robert D. Borsley & Jean-Pierre Koenig (ed.). 2020. *Head-Driven Phrase Structure Grammar: The handbook* (Empirically Oriented Theoretical Morphology and Syntax). Berlin: Language Science Press.

This title can be downloaded at:

http://langsci-press.org/catalog/book/000

© 2020, the authors

Published under the Creative Commons Attribution 4.0 Licence (CC BY 4.0):

http://creativecommons.org/licenses/by/4.0/

ISBN: no digital ISBN

no print ISBNs!

ISSN: 2366-3529

no DOI

ID not assigned!

Cover and concept of design: Ulrike Harbort Typesetting: Stefan Müller, Elizabeth Pankratz

Proofreading: Elizabeth Pankratz

Fonts: Libertinus, Arimo, DejaVu Sans Mono

Typesetting software: X¬IMTeX

Language Science Press Xhain Grünberger Str. 16 10243 Berlin, Germany langsci-press.org

Storage and cataloguing done by FU Berlin



Contents

Preface		V
Ι	Introduction	
1	Basic properties and elements Anne Abeillé & Bob Borsley	3
2	The evolution of HPSG Dan Flickinger, Carl Pollard & Tom Wasow	7
3	Formal Background Frank Richter	45
4	The nature and role of the lexicon in HPSG Anthony Davis & Jean-Pierre Koenig	81
5	HPSG in understudied languages Douglas L. Ball	129
II	Syntactic phenomena	
6	Agreement Stephen Wechsler	169
7	Case Adam Przepiórkowski	195
8	Nominal structures Frank Van Evnde	225

Contents

9	Argument structure and linking	
	Stephen Wechsler, Jean-Pierre Koenig & Anthony Davis	267
10	Constituent order Stefan Müller	319
11	Clitics Berthold Crysmann & Gerald Penn	367
12	Complex predicates Danièle Godard & Pollet Samvelian	369
13	Control and Raising Anne Abeillé	429
14	Unbounded Dependencies Robert D. Borsley & Berthold Crysmann	463
15	Relative clauses in HPSG Doug Arnold & Danièle Godard	519
16	Island phenomena and related matters Rui Chaves	583
17	Coordination Anne Abeillé & Rui P. Chaves	639
18	Idioms Manfred Sailer	691
19	Negation Jong-Bok Kim	725
20	Ellipsis Joanna Nykiel & Jong-Bok Kim	759
21	Anaphoric Binding Stefan Müller & António Branco	789

III	Other levels of description	
22	Morphology Berthold Crysmann	845
23	Semantics Jean-Pierre Koenig & Frank Richter	895
24	Information structure Kordula De Kuthy	935
IV	Other areas of linguistics	
25	Processing Tom Wasow	975
26	Computational linguistics and grammar engineering Emily M. Bender & Guy Emerson	997
27	Grammar in dialogue Andy Lücking, Jonathan Ginzburg & Robin Cooper	1043
28	Sign languages Markus Steinbach & Anke Holler	1089
29	Gesture Andy Lücking	1093
V	The broader picture	
30	HPSG and Minimalism Robert D. Borsley & Stefan Müller	1145 I
31	HPSG and Categorial Grammar Yusuke Kubota	1219
32	HPSG and Lexical Functional Grammar Stephen Wechsler & Ash Asudeh	1279

Contents

33	HPSG and Dependency Grammar Dick Hudson	1319
34	HPSG and Construction Grammar Stefan Müller	1365
Ind	dexes	1419

Preface

Head-driven Phrase Structure Grammar (HPSG) is a declarative (or, as is often said, constraint-based) monostratal approach to grammar, which dates back to early 1985. when Carl Pollard presented his Lectures on HPSG. It was developed initially in joint work by Pollard and Ivan Sag, but many other people have made important contributions to its development over the decades. It provides a framework for the formulation and implementation of natural language grammars which are (i) linguistically motivated, (ii) formally explicit, and (iii) computationally tractable. From the very beginning it has involved both theoretical and computational work seeking both to address the theoretical concerns of linguists and the practical issues involved in building a useful natural language processing system.

HPSG is an eclectic framework which has drawn ideas from the earlier Generalized Phrase Structure Grammar (GPSG, Gazdar et al. 1985) framework, Categorial Grammar (Ajdukiewicz 1935), and, other frameworks such as Lexical-Functional Grammar (LFG, Bresnan 1982). It has naturally evolved over the decades. Thus, the construction-based version of HPSG, which emerged in the mid 1990s (Sag 1997; Ginzburg & Sag 2000), differs from earlier work (Pollard & Sag 1987; 1994) in employing complex hierarchies of phrase types or constructions. Similarly, the more recent Sign-Based Construction Grammar approach differs from earlier versions of HPSG in making a distinction between signs and constructions and using to make a number of simplifications (Sag 2012).

Over the years, there have been groups of HPSG researchers in many locations engaged in both descriptive and theoretical work and often in building HPSG-based computational systems. There have also been various research and teaching networks, and an annual conference since 1993. The result of this work is a rich and varied body of research focusing on a variety of languages and offering a variety of insights. The present volume seeks to provide a picture of where HPSG is today. It begins with a number of introductory chapters dealing with various general issues. This is followed by chapters outlining HPSG ideas about some of the most important syntactic phenomena. Next are a number of chapters on other levels of description and then chapters on other areas of lin-

guistics. Finally, a number of chapters consider the relation between HPSG and other theoretical frameworks.

It should be noted that for various reasons not all areas of HPSG research are covered in the Handbook (e.g., Phonology). So, the fact that a particular topic is not addressed in the Handbook should not be interpreted as an absence of research on the topic. Readers interested in such topics refere to the HPSG online bibliography maintiained at the Humboldt Universität zu Berlin.¹

All chapters were reviewed by one author and at least one of the editors. All chapters were reviewed by Stefan Müller. Jean-Pierre Koenig and Stefan Müller did a final round of reading all papers and checked for consistency and cross linking between the chapters.

Acknowledgements

We thank all the authors for their great contribution to the book. We thank the authors for reviewing chapter outlines of other authors and for reviewing chapters of other authors. We thank Frank Richter, Bob Levine, Roland Schäfer for dicussion of points related to the handbook and Elizabeth Pankratz for extremely careful proofreading and help with typesetting issues. We also thank Elisabeth Eberle and Luisa Kalvelage for doing bibliographies and typesetting trees of several chapters.

References

Ajdukiewicz, Kazimierz. 1935. Die syntaktische Konnexität. *Studia Philosophica* 1. 1–27.

Bresnan, Joan (ed.). 1982. *The mental representation of grammatical relations* (MIT Press Series on Cognitive Theory and Mental Representation). Cambridge, MA/London: MIT Press.

Gazdar, Gerald, Ewan Klein, Geoffrey K. Pullum & Ivan A. Sag. 1985. *Generalized Phrase Structure Grammar*. Cambridge, MA: Harvard University Press.

Ginzburg, Jonathan & Ivan A. Sag. 2000. *Interrogative investigations: The form, meaning, and use of English interrogatives* (CSLI Lecture Notes 123). Stanford, CA: CSLI Publications.

Pollard, Carl J. & Ivan A. Sag. 1987. *Information-based syntax and semantics* (CSLI Lecture Notes 13). Stanford, CA: CSLI Publications.

¹https://hpsg.hu-berlin.de/HPSG-Bib/, 2020-03-18.

- Pollard, Carl J. & Ivan A. Sag. 1994. *Head-Driven Phrase Structure Grammar* (Studies in Contemporary Linguistics). Chicago: The University of Chicago Press.
- Sag, Ivan A. 1997. English relative clause constructions. *Journal of Linguistics* 33(2). 431–484. DOI:10.1017/S002222679700652X
- Sag, Ivan A. 2012. Sign-Based Construction Grammar: An informal synopsis. In Hans C. Boas & Ivan A. Sag (eds.), *Sign-Based Construction Grammar* (CSLI Lecture Notes 193), 69–202. Stanford, CA: CSLI Publications.

Part I Introduction