Head-Driven Phrase Structure Grammar

The handbook

Edited by

Stefan Müller

Anne Abeillé

Robert D. Borsley

Jean-Pierre Koenig

Empirically Oriented Theoretical Morphology and Syntax

Empirically Oriented Theoretical Morphology and Syntax

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 (eds.). 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

ISBN: 978-3-96110-255-6 (Digital)
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: XeLaTeX

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

Storage and cataloguing done by FU Berlin

Contents

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.

Open access

Many authors of this handbook were involved in several other handbook projects before (some that cover various aspects of HPSG) and by now there are at least five handbook articles on HPSG available. But the editors felt that writing one authoritative resource describing the framework and being available free of charge to everybody was an important service to the linguistic community. We hence decided to publish the book open access with Language Science Press.

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 and for converting a complicated chapter from Word into LaTeX.

We thank Sebastian Nordhoff and Felix Kopecky for constant support regarding LaTeX issues both for the book project as such and individual authors. Felix implemented a new LaTeX class for typesetting AVMs (`langsci-avm`), which was used for typesetting this book. It is compatible with more modern font management systems and with the `forest` package, which is used for most of the trees in this book.

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

We thank Sašo Živanović for writing and maintaining the `forest` package and for help specifying specific styles with very advanced features. His package turned typesetting trees from a nightmare into pure fun!

The code of the book is available on github and we hope that it may serve as role model for future publications of HPSG papers.

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

Pollard, Carl & 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