

Lecture Notes in Artificial Intelligence 2014

Subseries of Lecture Notes in Computer Science

Edited by J. G. Carbonell and J. Siekmann

Lecture Notes in Computer Science

Edited by G. Goos, J. Hartmanis and J. van Leeuwen

**Springer**

*Berlin*

*Heidelberg*

*New York*

*Barcelona*

*Hong Kong*

*London*

*Milan*

*Paris*

*Singapore*

*Tokyo*

Michael Moortgat (Ed.)

# Logical Aspects of Computational Linguistics

Third International Conference, LACL'98  
Grenoble, France, December 14-16, 1998  
Selected Papers



Springer

**Series Editors**

Jaime G. Carbonell, Carnegie Mellon University, Pittsburgh, PA, USA  
Jörg Siekmann, University of Saarland, Saarbrücken, Germany

**Volume Editor**

Michael Moortgat  
Utrecht Institute of Linguistics OTS  
Trans 10, 3512 JK Utrecht, The Netherlands  
E-mail: Michael.Moortgat@let.uu.nl

**Cataloging-in-Publication Data applied for**

**Die Deutsche Bibliothek - CIP-Einheitsaufnahme**

Logical aspects of computational linguistics : third international conference ; selected papers / LACL '98, Grenoble, France, December 14 - 16, 1998. Michael Moortgat (ed.). - Berlin ; Heidelberg ; New York ; Barcelona ; Hong Kong ; London ; Milan ; Paris ; Singapore ; Tokyo : Springer, 2001  
(Lecture notes in computer science ; Vol. 2014 : Lecture notes in artificial intelligence)  
ISBN 3-540-42251-X

**CR Subject Classification (1998): I.2, F.4.1**

**ISBN 3-540-42251-X Springer-Verlag Berlin Heidelberg New York**

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer-Verlag. Violations are liable for prosecution under the German Copyright Law.

Springer-Verlag Berlin Heidelberg New York  
a member of BertelsmannSpringer Science+Business Media GmbH

<http://www.springer.de>

© Springer-Verlag Berlin Heidelberg 2001  
Printed in Germany

Typesetting: Camera-ready by author, data conversion by PTP-Berlin, Stefan Sossna  
Printed on acid-free paper      SPIN: 10782159      06/3142      5 4 3 2 1 0

# Organization

## Program Committee

*Chair* Michael Moortgat (OTS Utrecht)  
Johan van Benthem (ILLC Amsterdam)  
Gosse Bouma (Groningen)  
Vijay Shanker (Delaware)  
Erhard Hinrichs (Tübingen)  
Mary Dalrymple (Xerox, Palo Alto)  
Ruy de Queiroz (Recife)  
François Lamarche (LORIA Nancy)  
Christian Retoré (IRISA Rennes)  
Uwe Reyle (IMS Stuttgart)

## Organizing Committee

*Chair* Alain Lecomte (Université Grenoble 2 & Project Calligramme, LORIA)  
Denis Vernant (Groupe de Recherches Philosophie, Langage et Cognition)  
Jean-Michel Adam (Département Informatique & Mathématiques)

The local Organizing Committee thanks Catherine Finkel (Université Pierre Mendès-France), Claude Jeannin and Amélie de Paoli (UFR Sciences de l'Homme et de la Société) for their logistic support during the workshop, and François Lamarche (LORIA) and Christian Retoré (IRISA) for passing on their experience gained during the organization of previous LACL conferences.

## Sponsoring Institutions

La Ville de Grenoble  
France Télécom – CNET  
Xerox Research Center Europe  
Université Pierre Mendès-France Grenoble 2  
INRIA Rhône-Alpes

# Preface

The conference series Logical Aspects of Computational Linguistics (LACL) aims at providing a forum for the presentation and discussion of current research in all the formal and logical aspects of computational linguistics. The LACL initiative started with a workshop held in Nancy (France) in 1995. Selected papers from this event have appeared as a special issue of the *Journal of Logic Language and Information*, Volume 7(4), 1998. In 1996, LACL shifted to the format of an international conference. LACL'96 and '97 were both held in Nancy (France). The proceedings appeared as volumes 1328 and 1582 of the Springer Lecture Notes in Artificial Intelligence.

This volume contains selected papers of the third international conference on Logical Aspects of Computational Linguistics (LACL'98), held in Grenoble, France, from December 14 to 16, 1998. The conference was organized by the University Pierre Mendès-France (Grenoble 2) together with LORIA (Laboratoire Lorrain d'Informatique et Applications, Nancy). On the basis of 33 submitted 4-page abstracts, the Program Committee selected 19 contributions for presentation. In addition to the selected papers, the program featured three invited talks, by Maarten de Rijke (ILLC, Amsterdam), Makoto Kanazawa (Chiba University, Japan), and Fernando Pereira (AT&T Labs). After the conference, the contributors were invited to submit a full paper for the conference proceedings.

I thank the members of the Program Committee for their conscientious work in refereeing the submitted abstracts and the full papers, and the authors of the invited papers and the regular presentations for their stimulating contributions to the conference. Special thanks go to the Organizing Committee, in particular Alain Lecomte, whose efficiency contributed greatly to the success of LACL'98.

April 2001

Michael Moortgat

# Table of Contents

## Invited Paper

- Deductions with Meaning ..... 1  
*Christof Monz, Maarten de Rijke (ILLC, Amsterdam)*

## Contributed Papers

- Computational Solutions for Structural Constraints  
(Learning Structural Permissions in Categorial Grammar) ..... 11  
*Marcelo Finger (University of São Paulo)*
- Hypothetical Reasoning and Basic Non-constituent Coordination  
in Type-Logical Grammar ..... 31  
*Nissim Francez (Technion-IIT, Haifa)*
- Computational and Structural Aspects of Openly Specified  
Type Hierarchies ..... 48  
*Stephen J. Hegner (Umeå University)*
- Anaphora and Quantification in Categorial Grammar ..... 70  
*Gerhard Jäger (ZAS, Berlin)*
- An LTAG Perspective on Categorial Inference ..... 90  
*Aravind K. Joshi, Seth Kulick, Natasha Kurtonina (University of Pennsylvania)*
- Dominance Constraints: Algorithms and Complexity ..... 106  
*Alexander Koller, Joachim Niehren (Universität des Saarlandes),  
Ralf Treinen (Université Paris-Sud)*
- Strict Compositionality and Literal Movement Grammars ..... 126  
*Marcus Kracht (Freie Universität Berlin)*
- Categorial Minimalism ..... 143  
*Alain Lecomte (Université Pierre Mendès France, Grenoble 2 & LORIA, Nancy)*
- Sequential Construction of Logical Forms ..... 159  
*Wilfried Meyer-Viol (King's College, London)*
- Derivational Minimalism Is Mildly Context-Sensitive ..... 179  
*Jens Michaelis (Universität Potsdam)*

Dominance Constraints in Context Unification . . . . .	199
<i>Joachim Niehren, Alexander Koller (Universität des Saarlandes)</i>	
A Revision System of Circular Objects and Its Applications to Dynamic Semantics of Dialogues . . . . .	219
<i>Norihiro Ogata (Osaka University)</i>	
Lexicalized Proof-Nets and TAGs . . . . .	230
<i>Sylvain Pogodalla (XRCE, Meylan)</i>	
Lambek Calculus Proofs and Tree Automata . . . . .	251
<i>Hans-Joerg Tiede (Illinois Wesleyan University)</i>	
Grammars with Composite Storages . . . . .	266
<i>Christian Wartena (Universität Potsdam)</i>	
<b>Author Index . . . . .</b>	<b>287</b>

# Author Index

- Finger, Marcelo 11  
Francez, Nissim 31  
  
Hegner, Stephen J. 48  
  
Jäger, Gerhard 70  
Joshi, Aravind K. 90  
  
Koller, Alexander 106, 199  
Kracht, Marcus 126  
Kulick, Seth 90  
Kurtonina, Natasha 90  
  
Lecomte, Alain 143
- Meyer-Viol, Wilfried 159  
Michaelis, Jens 179  
Monz, Christof 1  
  
Niehren, Joachim 106, 199  
  
Ogata, Norihiro 219  
Pogodalla, Sylvain 230  
  
de Rijke, Maarten 1  
Tiede, Hans-Joerg 251  
Treinen, Ralf 106  
  
Wartena, Christian 266