

25th
Annual Meeting
of the
Association for
Computational Linguistics

Proceedings of the Conference

6-9 July 1987
Stanford University
Stanford, California, USA

Published by the Association for Computational Linguistics

© 1987, Association for Computational Linguistics

Order copies of this and other ACL proceedings from:

Donald E. Walker (ACL)
Bell Communications Research
445 South Street MRE 2A379
Morristown, NJ 07960-1961, USA

PREFACE

The *Twenty-Fifth Annual Meeting of the Association for Computational Linguistics* offers the membership a chance to acknowledge and benefit from the wide range of developments in computational linguistics in the past several years. The papers in the program reflect the growing interaction between computational linguists trained in information processing approaches and those trained in linguistic disciplines. At the same time the program's papers report on new developments in many areas of computational linguistics that are now the forefront of research in our field.

Because of the exponentially increasing number of papers submitted this year, the committee chose to reduce the number of panels and invited talks in favor of accepting additional papers. The panel on *Directions for Natural Language Processing* will provide the membership with a chance to assess current developments in the field and their potential for the next several years. The invited talk on *Speech Act Theory* will update the membership in depth on one part of our field that shows special promise for natural language processing. At the same time, this year's tutorials have been planned to provide the membership with lectures in areas of computational linguistics that complement those being studied during the courses at the 1987 Linguistic Institute at Stanford University.

The *Public Forum on Evaluating Natural Language Systems* is a special part of this year's program. It permits all of the membership to participate in the examination of a set of issues that are pressing to every one in the community, no matter what their particular specialty may be. It is my hope that this forum will further research and practical measures on evaluating all aspects of natural language systems. The forum is also an experiment in programming for an annual meeting because of its unusual scheduling structure.

This year's meeting is the product of a number of members' talent, time and hard work (in all combinations of those terms!). I am indebted to the Program Committee for their contributions to the content of the program. It is no small task to read and understand the large number of papers submitted, and the committee covered the papers with great care. My thanks to them: Robert Berwick, Massachusetts Institute of Technology; Julia Hirschberg, AT&T Bell Laboratories; Aravind Joshi, University of Pennsylvania; Janet Kolodner, Georgia Institute of Technology; Paul Martin, SRI International; Kathleen McKeown, Columbia University; James Meehan, Cognitive Systems Inc.; Sergei Nirenberg, Carnegie-Mellon University; Martha Palmer, UNISYS; C. Raymond Perrault, SRI International.

Special thanks to Dan Flickenger, Hewlett-Packard Laboratories, and Jerry Hobbs, SRI International, for organizing the *Forum on Evaluating Natural Language Systems*. I also wish to express my appreciation to Hewlett-Packard, Inc. for sponsoring the reception following the Forum.

This year's annual meeting could not have taken place without the organizational talents and energy of several ACL members, in particular Douglas Appelt of SRI International who was responsible for local arrangements, Paul Martin of SRI International who organized the exhibits program, and Joyce Friedman of Boston University who put together the Tutorials Program. Bill Mann, USC/Information Sciences Institute, the ACL President, has provided me with useful advice on many aspects of the program. Ivan Sag, Stanford University, was particularly helpful in co-ordinating this year's meeting with the 1987 Linguistic Institute. I also want to acknowledge the special assistance of my secretary, Rachel Moser, for invaluable organizational and secretarial help with the papers submitted.

I wish to extend a very special thanks to Don Walker, Bell Communications Research, the ACL Secretary-Treasurer. Until I became program chair, I was unaware of just how much effort Don invests at every stage of the meeting, from advertising the Call for Papers to publishing the schedule and registration information for the meeting to producing the Proceedings (as well as much, much more). This meeting could not have taken place without him.

Candy Sidner, *BBN Laboratories*
Chair, Program Committee

CONFERENCE PROGRAM

MONDAY MORNING, 6 JULY

- 9:00—1:00 **TUTORIAL SESSIONS**
- Evaluating Natural Language Interfaces*
Madeleine Bates
- Knowledge-Based Machine Translation*
Jaime Carbonell
- The Form and Interpretation of English Intonation*
Janet Pierrehumbert

MONDAY AFTERNOON, 6 JULY

- 2:30—5:00 **FORUM: *Evaluating Natural Language Systems***
Dan Flickinger and Jerry Hobbs, Coordinators
Sponsored by Hewlett-Packard

TUESDAY MORNING, JULY 7

- 9:00—9:15 **Opening remarks and announcements**
- 9:15—10:15 **INVITED TALK: *Recent Developments in Speech Act Theory***
C. Raymond Perrault
- 10:45—11:10 *Temporal Ontology in Natural Language*
Marc Moens and Mark Steedman
- 11:10—11:35 *A Compositional Semantics of Temporal Expressions in English*
Erhard W. Hinrichs
- 11:35—12:00 *Situations and Intervals*
Rebecca J. Passonneau

TUESDAY AFTERNOON, JULY 7

- 1:30—2:00 *JETR: A Robust Machine Translation System*
Rika Yoshii
- 2:00—2:25 *An Environment for Acquiring Semantic Information/IR*
Damaris M. Ayuso, Varda Shaked, Ralph M. Weischedel
- 2:25—2:50 *Grammatical and Ungrammatical Structures in User-Adviser Dialogues: Evidence for Sufficiency of Restricted Languages in Natural Language Interfaces to Advisory Systems*
Raymonde Guindon, Kelly Shuldberg, Joyce Conner
- 2:50—3:15 *An Attribute-Grammar Implementation of Government-Binding Theory*
Nelson Correa
- 3:45—4:10 *Getting Idioms into a Lexicon Based Parser's Head*
Oliviero Stock
- 4:10—4:35 *Phrasal Analysis of Long Noun Sequences*
Yigal Arens, John J. Granacki, Alice C. Parker
- 4:35—5:00 *Constituent-Based Morphological Parsing: A New Approach to the Problem of Word-Recognition*
Richard Sproat, Barbara Brunson

- 5:00–5:25 *Predictive Combinators: A Method for Efficient Processing of Combinatory Categorical Grammars*
Kent Wittenburg
- 5:25–5:50 *A Lazy Way to Chart-Parse with Categorical Grammars*
Remo Pareschi, Mark Steedman

WEDNESDAY MORNING, JULY 8

- 9:00–9:25 *A Logical Version of Functional Grammar*
William C. Rounds, Alexis Manaster-Ramer
- 9:25–9:50 *Functional Unification Grammar Revisited*
Kathleen R. McKeown, Cecile L. Paris
- 9:50–10:15 *Characterizing Structural Descriptions Produced by Various Grammatical Formalisms*
K. Vijay-Shanker, David J. Weir, Aravind K. Joshi
- 10:45–11:10 *On the Succinctness Properties of Unordered Context-free Grammars*
M. Drew Moshier, William C. Rounds
- 11:10–11:35 *Context-freeness of the Language Accepted by Marcus' Parser*
R. Nohozoor-Farshi
- 11:35–12:00 *Semantic Structure Analysis of Japanese Noun Phrases with Adnominal Particles*
Akira Shimazu, Shozo Naito, Hirosato Nomura

WEDNESDAY AFTERNOON, JULY 8

- 1:30–3:00 **PANEL: After 25 Years, Directions for Natural Language Processing**
Jaime Carbonell, Barbara Grosz, Mitch Marcus, Janet Pierrehumbert
Ralph Weischedel, *moderator*
- 3:30–3:55 *Nominalizations in PUNDIT*
Deborah Dahl, Martha Palmer, Rebecca Passonneau
- 3:55–4:20 *Toward Treating English Nominals Correctly*
Richard W. Sproat, Mark Y. Liberman
- 4:20–4:45 *The Interpretation of Tense in Discourse*
Bonnie Lynn Webber
- 4:45–5:10 *A Centering Approach to Pronouns*
Susan E. Brennan, Marilyn W. Friedman, Carl Pollard
- 5:10–5:35 *Now Let's Talk About Now: Identifying Cue Phrases Intonationally*
Julia Hirschberg, Diane Litman
- 7:00–8:00 **RECEPTION**
Rodin Gardens, Stanford University
- 8:00–10:00 **BANQUET**
Rodin Gardens, Stanford University
Presidential Address: William Mann

THURSDAY MORNING, JULY 9

- 9:00–9:25 *On the Acquisition of Lexical Entries: The Perceptual Origin of Thematic Relations*
James Pustejovsky
- 9:35–9:50 *The Logical Analysis of Lexical Ambiguity*
David Stallard
- 9:50–10:15 *FLUSH: A Flexible Lexicon Design*
David J. Besemer, Paul S. Jacobs

- 10:45–11:10 *The Derivation of a Grammatically Indexed Lexicon from the Longman Dictionary of Contemporary English*
Bran K. Boguraev, Ted Briscoe, John Carroll, David Carter, Claire Grover
- 11:10–12:00 **BUSINESS MEETING & ELECTIONS**
Nominations for ACL Offices for 1988
President: Alan Biermann, Duke University
Vice President: Candy Sidner, BBN Laboratories
Secretary-Treasurer: Donald Walker, Bell Communications Research
Executive Committee (1988-1990): Bruce Ballard AT&T Bell Laboratories
Nominating Committee (1988-1990): William Mann, USC/ISI

THURSDAY AFTERNOON, JULY 9

- 1:30–1:55 *Lexical Selection in the Process of Language Generation*
James Pustejovsky, Sergei Nirenburg
- 1:55–2:20 *Constraints on the Generation of Adjunct Clauses*
Alison K. Huettner, Marie M. Vaughan, David D. McDonald
- 2:20–2:45 *A Model for Generating Better Explanations*
Peter van Beek
- 2:45–3:10 *Expressing Concern*
Marc Luria
- 3:40–4:05 *Incorporating Inheritance and Feature Structures into a Logic Grammar Formalism*
Harry H. Porter
- 4:05–4:30 *A Unification Method for Disjunctive Feature Descriptions*
Robert Kasper
- 4:30–4:55 *Revised Generalized Phrase Structure Grammar*
Eric Sven Ristad

TABLE OF CONTENTS

<i>Temporal Ontology in Natural Language</i>	
Marc Moens and Mark Steedman	1
<i>A Compositional Semantics of Temporal Expressions in English</i>	
Erhard W. Hinrichs	8
<i>Situations and Intervals</i>	
Rebecca J. Passonneau	16
<i>JETR: A Robust Machine Translation System</i>	
Rika Yoshii	25
<i>An Environment for Acquiring Semantic Information</i>	
Damaris M. Ayuso, Varda Shaked, Ralph M. Weischedel	32
<i>Grammatical and Ungrammatical Structures in User-Adviser Dialogues: Evidence for Sufficiency of Restricted Languages in Natural Language Interfaces to Advisory Systems</i>	
Raymonde Guindon, Kelly Shuldberg, Joyce Conner	41
<i>An Attribute-Grammar Implementation of Government-Binding Theory</i>	
Nelson Correa	45
<i>Getting Idioms into a Lexicon-Based Parser's Head</i>	
Oliviero Stock	52
<i>Phrasal Analysis of Long Noun Sequences</i>	
Yigal Arens, John J. Granacki, Alice C. Parker	59
<i>Constituent-Based Morphological Parsing: A New Approach to the Problem of Word-Recognition</i>	
Richard Sproat, Barbara Brunson	65
<i>Predictive Combinators: A Method for Efficient Processing of Combinatory Categorical Grammars</i>	
Kent Wittenburg	73
<i>A Lazy Way to Chart-Parse with Categorical Grammars</i>	
Remo Pareschi, Mark Steedman	81
<i>A Logical Version of Functional Grammar</i>	
William C. Rounds, Alexis Manaster-Ramer	89
<i>Functional Unification Grammar Revisited</i>	
Kathleen R. McKeown, Cecile L. Paris	97
<i>Characterizing Structural Descriptions Produced by Various Grammatical Formalisms</i>	
K. Vijay-Shanker, David J. Weir, Aravind K. Joshi	104
<i>On the Succinctness Properties of Unordered Context-free Grammars</i>	
M. Drew Moshier, William C. Rounds	112
<i>Context-freeness of the Language Accepted by Marcus' Parser</i>	
R. Nohozoor-Farshi	117
<i>Semantic Structure Analysis of Japanese Noun Phrases with Adnominal Particles</i>	
Akira Shimazu, Shozo Naito, Hirosato Nomura	123
<i>Nominalizations in PUNDIT</i>	
Deborah Dahl, Martha Palmer, Rebecca Passonneau	131
<i>Toward Treating English Nominals Correctly</i>	
Richard W. Sproat, Mark Y. Liberman	140

<i>The Interpretation of Tense in Discourse</i> Bonnie Lynn Webber	147
<i>A Centering Approach to Pronouns</i> Susan E. Brennan, Marilyn W. Friedman, Carl Pollard	155
<i>Now Let's Talk About Now: Identifying Cue Phrases Intonationally</i> Julia Hirschberg, Diane Litman	163
<i>On the Acquisition of Lexical Entries: The Perceptual Origin of Thematic Relations</i> James Pustejovsky	172
<i>The Logical Analysis of Lexical Ambiguity</i> David Stallard	179
<i>FLUSH: A Flexible Lexicon Design</i> David J. Besemer, Paul S. Jacobs	186
<i>The Derivation of a Grammatically Indexed Lexicon from the Longman Dictionary of Contemporary English</i> Bran K. Boguraev, Ted Briscoe, John Carroll, David Carter, Claire Grover	193
<i>Lexical Selection in the Process of Language Generation</i> James Pustejovsky, Sergei Nirenburg	201
<i>Constraints on the Generation of Adjunct Clauses</i> Alison K. Huettner, Marie M. Vaughan, David D. McDonald	207
<i>A Model for Generating Better Explanations</i> Peter van Beek	215
<i>Expressing Concern</i> Marc Luria	221
<i>Incorporating Inheritance and Feature Structures into a Logic Grammar Formalism</i> Harry H. Porter	228
<i>A Unification Method for Disjunctive Feature Descriptions</i> Robert Kasper	235
<i>Revised Generalized Phrase Structure Grammar</i> Eric Sven Ristad	243

AUTHOR INDEX

Yigal Arens	59	Shozo Naito	123
Damaris M. Ayuso	32	Sergei Nirenburg	201
David J. Besemer	186	R. Nohozoor-Farshi	117
Bran K. Boguraev	193	Hirosato Nomura	123
Susan E. Brennan	155	Martha Palmer	131
Ted Briscoe	193	Remo Pareschi	81
Barbara Brunson	65	Cecile L. Paris	97
John Carroll	193	Alice C. Parker	59
David Carter	193	Rebecca J. Passonneau	16, 131
Joyce Conner	41	Carl Pollard	155
Nelson Correa	45	Harry H. Porter	228
Deborah Dahl	131	James Pustejovsky	172, 201
Marilyn W. Friedman	155	Eric Sven Ristad	243
John J. Granacki	59	William C. Rounds	89, 112
Claire Grover	193	Varda Shaked	32
Raymonde Guindon	41	Akira Shimazu	123
Erhard W. Hinrichs	8	Kelly Shuldberg	41
Julia Hirschberg	163	Richard Sproat	65, 140
Alison K. Huettner	207	David Stallard	179
Paul S. Jacobs	186	Mark Steedman	1, 81
Aravind K. Joshi	104	Oliviero Stock	52
Robert Kasper	235	Peter van Beek	215
Mark Y. Liberman	140	Marie M. Vaughan	207
Diane Litman	163	K. Vijay-Shanker	104
Marc Luria	221	Bonnie Lynn Webber	147
Alexis Manaster-Ramer	89	David J. Weir	104
David D. McDonald	207	Ralph M. Weischedel	32
Kathleen R. McKeown	97	Kent Wittenburg	73
Marc Moens	1	Rika Yoshii	25
M. Drew Moshier	112		