plex future actions that cannot easily be thought of as sequences of abstract operations.

We also intend to explore whether an integrated view of planning and reasoning was abandoned prematurely. One possible end result of our research would be the disappearance of planning as a separate subject of study altogether, subsumed in a more inclusive and deeper theory of general reasoning.

D.3. Mind and action

Project Manager: John Perry

This project will attempt to bridge the gap between computational theory and practice, on the one hand, and philosophical insight, on the other, by using formal methods to bring intuitive theories of mind and action into a computational frame of reference. This will involve building a common technical vocabulary, possibly based on work in theoretical computer science on formalizing the relation between levels of abstraction in the description of complex computational processes (e.g., work on abstract data structures and the semantics of high-level languages). The ultimate goal is either a computationally meaningful reinterpretation of much of the intuitive terminology from the philosophy of mind and practical reasoning or a more radical revision of our ideas on how to describe mental structure and process. One important question we will try to answer is whether our model should include as a separate component each of the many attitudes that our language names (e.g., *believe, want, intend, fear).* If not, what criteria should be used to collapse them? We will look at the relationship between an objective "observer's" theory of mind and action and the commonsense "participants's" theory that we apply to each other in everyday life. Further, we will examine whether there is a systematic method for abstracting the latter type of theory from the semantics of propositional attitudes, how we can account computationally for how rational deliberation results in the causation of action, and what mechanism lead to "changes of mind."

D.4. The commonsense world

Project Manager: Robert C. Moore

Generating and interpreting fluent natural language requires considerable abilities to do commonsense reasoning, which in turn presupposes an explicit elaboration of our commonsense theories of the world. Such theories are also needed for extending semantical theories of natural language, since the semantics of our language and our commonsense view of the world are inextricably intertwined. We will focus on a handful of commonsense theories that are so basic to our view of the world that they arise in some form in almost any domain of discourse, for example, the commonsense theory of space and motion. We will also choose areas in which natural language has evolved special mechanisms for expressing information, so that a commonsense theory in such an area is almost essential to carrying out the semantical analysis of that part of language. The commonsense theory of time, for instance, must be understood in order to explicate adequately the semantics of tense and aspect.

Appendix: The Principals of CSLI

Jon Barwise, Director of CSLI, Stanford University
Joan Bresnan, Stanford University and Xerox PARC
Barbara J. Grosz, SRI International
Ronald Kaplan, Xerox PARC
Lauri Karttunen, SRI International
Martin Kay, Xerox PARC
John McCarthy, Stanford University
Robert C. Moore, SRI International
C. Raymond Perrault, SRI International
John Perry, Stanford University
Stanley Peters, Associate Director of CSLI, Stanford University
Stanley J. Rosenschein, SRI International
Ivan Sag, Stanford University
Patrick Suppes, Stanford University
Brian Cantwell Smith, Xerox PARC
Thomas Wasow, Stanford University
Terry Winograd, Stanford University

Program for the 21st Annual Meeting of the ACL

The 21st Annual Meeting of the Association for Computational Linguistics will be held 15-17 June 1983 at Massachusetts Institute of Technology, Cambridge, Massachusetts, USA. In addition to refereed papers, it will contain several new features. As a reflection of continuing growth and specialization within computational linguistics, the program committee felt that several intellectual developments of potentially wide interest required some introduction for non-specialists. Accordingly, the authors of submitted papers in two of these areas have been invited to give instead more extensive presentations with more tutorial content. David Israel will talk on computational implications of Barwise and Perry's newly emergent theory of situation semantics and Mark Liberman will present a tutorial overview on the new round of applications of techniques from artificial intelligence and computational linguistics to low-level speech analysis and phonetically-based speech recognition.

The sole panel discussion at the meeting is closely linked to a set of papers which are part of a new wave of work focusing on the computational complexity of various grammatical formalisms and on the relevance of such analyses. The program committee felt the differing views expressed in these papers strongly invited wider discussion. Ray Perrault has organized a

panel on these topics, and will set the stage with a tutorial presenting relevant formal underpinnings and historical background.

The Program Committee consisted of Mitchell Marcus, *Bell Laboratories,* Chair; Philip Cohen, *Fairchild Camera and Instrument Corporation;* Lauri Karttunen, *University of Texas, Austin;* William Mann, *USC/ISI;* Robert Moore, *SRI International;* Ann Robinson, *Symantec;* Robert Wilensky, *University of California, Berkeley.* Local Arrangements at MIT are being handled by Jonathan Allen and Judy Sobel.

Copies of the Proceedings, at $15 each, will be available from

Donald E. Walker -- ACL
SRI International
Menlo Park, CA 94025 USA

Wednesday, 15 June, 9:00–11:00
COMPUTATIONAL COMPLEXITY AND GRAMMATICAL FORMALISMS

Context-Freeness and the Computer Processing of Human Languages
Geoffrey K. Pullum, *University of California,* Santa Cruz

Factoring Recursion and Dependencies: An Aspect of Tree Adjoining Grammars (TAG) and A Comparison of Some Formal Properties of TAGs, GPSGs, PLGs, and LFGs
Aravind K. Joshi, *University of Pennsylvania*

Crossed Serial Dependencies: A Low-Power Parseable Extension to GPSG
Henry Thompson, *University of Edinburgh*

Formal Constraints on Metarules
Stuart M. Shieber, Susan U. Stucky, Hans Uszkoreit, Jane J. Robinson, *SRI International*

Wednesday, 15 June, 11:30-12:30

INVITED TALK - A Prolegomenon To Situation Semantics
David J. Israel, *Bolt Beranek and Newman*

Wednesday, 15 June, 2:30-5:00
SEMANTICS AND PRAGMATICS

A Modal Temporal Logic for Reasoning About Change
Eric Mays, *University of Pennsylvania*

Providing A Unified Account of Definite Noun Phrases in Discourse
Barbara J. Grosz, *SRI International;* Aravind K. Joshi, *University of Pennsylvania;* Scott Weinstein, *University of Pennsylvania*

Using Lambda-Calculus to Represent Meanings in Logic Grammars
David S. Warren, *SUNY at Stony Brook*

An Improper Treatment of Quantification in Ordinary English
Jerry R. Hobbs, *SRI International*

A Foundation for Semantic Interpretation
Graeme Hirst, *Brown University*

Thursday, 16 June, 9:00-10:00
GENERATION

Telegram: A Grammar Formalism for Language Planning
Douglas E. Appelt, *SRI International*

An Overview of the Nigel Text Generation Grammar
William C. Mann, *USC/Information Science Institute*

Thursday, 16 June, 10:30-12:30
SPEECH ANALYSIS

INVITED TALK – Approaches to Phonetically Based Speech Recognition: A Tutorial
Mark Liberman, *Bell Laboratories*

Automatic Recognition of Intonation Patterns
Janet B. Pierrehumbert, *Bell Laboratories*

A Finite-State Parser for Use in Speech Recognition
Kenneth W. Church, *Massachusetts Institute of Technology*

Thursday, 16 June, 2:30-5:00
FORMALISM

INVITED TALK – On the Mathematical Properties of Linguistic Theories
Ray Perrault, *University of Toronto*

PANEL: Generative Capacity and Computational Complexity of Linguistic Theories
Ray Perrault, *University of Toronto* (Chair)
Robert Berwick, *Massachusetts Institute of Technology*
Aravind Joshi, *University of Pennsylvania*
Ronald Kaplan, *Xerox Palo Alto Research Center*
Stanley Peters, *University of Texas*
Geoffrey Pullum, *University of California, Santa Cruz*
Stuart Shieber, *SRI International*
Henry Thompson, *University of Edinburgh*

Thursday, 16 June, 5:00-6:00

ACL Business Meeting

Nominations for ACL Offices for 1984:
President: Martha W. Evens, *Illinois Institute of Technology*
Vice President: Lance A. Miller, *IBM T.J. Watson Research Center*
Secretary-Treasurer: Donald E. Walker, *SRI International*
Executive Committee (1984-1986): Mitchell Marcus, *Bell Laboratories*

Nominating Committee (1984-1986): C. Raymond Perrault, *University of Toronto*

Friday, 17 June, 9:00-12:00
PARSING

A Framework for Processing Partially Free Word Order
Hans Uszkoreit, *SRI International*

Sentence Disambiguation by a Shift-Reduce Parsing Technique
Stuart M. Shieber, *SRI International*

Syntactic Constraints and Efficient Parsability
Robert C. Berwick, Amy S. Weinberg, *Massachusetts Institute of Technology*

Deterministic Parsing of Syntactic Non-fluencies
Donald Hindle, *Bell Laboratories*

D-Theory: Talking about Talking about Trees
Mitchell P. Marcus, Donald Hindle, Margaret Fleck, *Bell Laboratories*

Parsing as Deduction
Fernando C. N. Pereira, David H. D. Warren, *SRI International*

Friday, 17 June, 2:00-4:30
APPLICATIONS

Design and Implementation of a Knowledge-Based Report Generator
Karen Kukich, *Bell Laboratories*

Menu-Based Natural Language Understanding
Harry R. Tennant, Kenneth M. Ross, Richard M. Saenz, Craig W. Thompson and James R. Miller, *Texas Instruments*

Knowledge Structures in UC, the UNIX[1] Consultant
David N. Chin, *University of California, Berkeley*

Discourse Pragmatics in Task-Oriented Natural Language Interfaces
Jaime G. Carbonell, *Carnegie-Mellon University*

Program for the Inaugural Meeting of the ACL European Chapter

The first and inaugural meeting of the European Chapter of the Association for Computational Linguistics will be held 1-2 September 1983 in Pisa, Italy. It will be organized by the Italian National Research Council, the Istituto di Linguistica Computazionale of Pisa, and the Istituto di Elettrotecnica of the University of Genoa. Support is being provided by the Council of the European Communities, Perkin Elmer Italiana, the Cassa di Risparmio di Pisa, and the Ente Provinciale del Turismo di Pisa.

[1] Trademark of Bell Laboratories.

The first officials of the European Chapter are:

Chair
Eva Hajicova, *Charles University*
Secretary
Harry Somers, *University of Manchester*
Treasurer
Mike Rosner, *ISSCO*
Executive Committee
Remko Scha, *Eindhoven, Netherlands*
Yorick Wilks, *University of Essex*
Hubert Lehmann, *IBM-Deutschland*
Advisory Committee:
Giacomo Ferrari, *Istituto di Linguistica Computazionale*
Gerald Gazdar, *University of Sussex*
Peter Hellwig, *University of Heidelberg*
Bente Maegaard, *University of Copenhagen*

The Program Committee consisted of Giacomo Ferrari, *Istituto di Linguistica Computazionale,* Chair; Joost Breuker, *COWO* (Amsterdam); Gerald Gazdar, *University of Sussex;* Margaret King, *ISSCO;* Winfred Lenders, *University of Bonn;* Petr Sgall, *Charles University;* and Antonio Zampolli, *Istituto di Linguistica Computazionale.* Ferrari also is coordinating local arrangements for the Conference.

Copies of the Proceedings, at $15 each, will be available from

Donald E. Walker – ACL
SRI International
Menlo Park, CA 94025 USA

Thursday, 1 September, 9:30–11:10

Abstract Control Structures and the Semantics of Quantifiers
Steven Cushing, *St. Anselm College*

L'Idee de Grammaire avec le Contexte Naturel
Leszek Haduch, *Technical University of Lodz*

Iterative Operations
Sae Yamada, *Notre Dame Seishin University*

Structure of Sentence and Inferencing in Question Answering
Eva Hajicova and Petr Sgall, *Charles University*

Thursday, 1 September, 11:30–12:50

A Phonological Processor for Italian
Rodolfo Delmonte, *Universita degli Studi di Venezia*

An Expert System for the Production of Phoneme Strings from Unmarked English Text Using Machine-Induced Rules
Alberto Maria Segre, Bruce Arne Sherwood, and Wayne B. Dickerson, *University of Illinois*

Vocal Interface for a Man-Machine Dialog
Dominique Beroule, *LIMSI*