

Theoretical Issues in Natural Language Processing
10-13 June 1975

Tuesday, 10 June 9:00-12:30

Session 1

--Memory: Part I. Natural Language Input

Chairman: Ann Robinson

Speakers: Woods, Riesbeck, Simmons, Marcus, Heidorn, Waltz, Kay

Tuesday, 10 June 3:00-6:00

Session 2

--Representing knowledge: Part I. Primitives

Chairman: Jon Allen

Speakers: Bobrow, Schank, Miller, Fillmore, Clark, Wilks, Jackendoff

Wednesday, 11 June 9:00-12:30

Session 3

Memory: Part II. Organization

Chairman: Barbara Deutsch

Speakers: Rieger, Charniak, Ortony, Fillmore, Collins

Wednesday, 11 June 3:00-6:00

Session 4

--Natural Language Generation and Belief Systems

Chairman: Yorick Wilks

Speakers: Clippinger, Bruce, Becker, Goldman, Joshi, Klein

Thursday, 12 June 9:00-12:30

Session 5

--Representing knowledge: Part III. Frames

Chairman: Eugene Charniak

Speakers: Winograd, Minsky, Feldman, Schank, Chafe, Hewitt

Thursday, 12 June 3:00-6:00

Session 6

--What is a valid methodology for judging the quality of research in computational linguistics?

Chairman: Daniel Dennett

Speakers: Woods, Kaplan, Winograd, Wilks, Clippinger, Mann

Friday, 13 June 9:00-12:30

Session 7

--Representing knowledge: Part IV. Non-linguistic forms

Chairman: Andee Rubin

Speakers: Kosslyn, Abelson, Chafe, Pylyshyn, Palmer, Sloman

Friday, 13 June 3:00-6:00

Session 8

--Memory: Part III. Reasoning and Inference

Chairman: Allan Collins

Speakers: Rieger, Charniak, Schmidt, Abelson, Reiter, Clark

PREFACE

This collection of papers forms the point of departure of an interdisciplinary workshop on Theoretical Issues in Natural Language Processing sponsored by the Mathematical Social Sciences Board. The impetus for such a workshop, bringing together researchers and students from computational linguistics, psychology, linguistics and artificial intelligence, was a desire to provide a forum at which people with different interests in, and consequently different emphases on, the problems of natural language understanding, could learn of the models developed and difficult issues faced by people working on other aspects of understanding. It was felt that an exposure to different aspects and emphases would have a very beneficial effect on all fields of natural language research, and that without such an interchange the potential for much of that research would not be realized.

The idea behind this early circulated volume of position papers was to familiarize all the participants, speakers and audience alike, with the current ideas and paradigms in natural language understanding -- their evolution, scope and deficiencies. Specifically, the contributing speakers were asked to address such questions as:

1. What computational models and mechanisms have been proposed up to now in these areas?
2. What aspects of human language behavior are they meant to account for?
3. Are these models compatible?
4. Is there a single global view of language understanding and use that is adequately modelled by some combination of them?
5. Are there still significant aspects of human language use which they cannot account for?
6. What is the best model of human language use that can be assembled out of the concepts that have been developed in computational linguistics, linguistics, psychology and artificial intelligence?
7. How well does it really approximate what humans do with language?
8. With respect to gaps in that model, is there anything currently in the wind adequate to complete them?

Where speakers were not able to get us their position papers in time, their papers will appear in a supplement to this volume to be available at the workshop and to be included in all copies of this volume subsequently distributed.

We would like to give special thanks to the Association for Computational Linguistics for their practical assistance and advice, and to Connie Williams and Steve Butterfield for their efforts, patience and good humor in preparing this volume.

Bonnie Nash-Webber
Roger Schank

SESSION 1

Memory: Part I. Natural Language Input

"Augmented Phrase Structure Grammar"
George Heidorn 1

"Diagnosis as a Notion of Grammar"
Mitchell Marcus 6

"Computational Understanding"
Christopher Riesbeck 11

"The Clowns Microworld"
Robert F. Simmons 17

"On Understanding Poetry"
David L. Waltz 20

SESSION 2

Representing Knowledge: Part I. Primitives

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George A. Miller 30

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