

BIBLIOTHEQUE DU CERIST

LANGUAGE, THOUGHT, AND CULTURE
Advances in the Study of Cognition

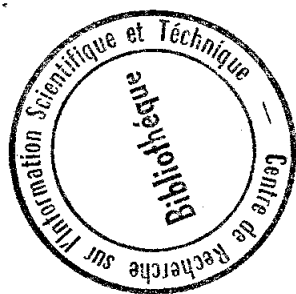
LANGUAGE, THOUGHT, AND CULTURE: *Advances in the
Study of Cognition*

Under the Editorship of: E. A. HAMMEL

DEPARTMENT OF ANTHROPOLOGY
UNIVERSITY OF CALIFORNIA
BERKELEY

- Michael Agar*, Ripping and Running: A Formal Ethnography of Urban Heroin Addicts
- Brent Berlin, Dennis E. Breedlove, and Peter H. Raven*, Principles of Tzeltal Plant Classification: An Introduction to the Botanical Ethnography of a Mayan-Speaking People of Highland Chiapas
- Mary Sanches and Ben Blount*, Sociocultural Dimensions of Language Use
- Daniel G. Bobrow and Allan Collins*, Representation and Understanding: Studies in Cognitive Science
- Domenico Parisi and Francesco Antinucci*, Essentials of Grammar
- Elizabeth Bates*, Language and Context: The Acquisition of Pragmatics
- Ben G. Blount and Mary Sanches*, Sociocultural Dimensions of Language Change
- Susan Ervin-Tripp and Claudia Mitchell-Kernan (Eds.)*, Child Discourse
- Lynn A. Friedman (Ed.)*, On the Other Hand: New Perspectives on American Sign Language
- Eugene S. Hunn*, Tzeltal Folk Zoology: The Classification of Discontinuities in Nature
- Jim Schenkein (Ed.)*, Studies in the Organization of Conversational Interaction
- David Parkin*, The Cultural Definition of Political Response: Lineal Destiny Among the Luo
- Stephen A. Tyler*, The Said and the Unsaid: Mind, Meaning, and Culture
- Susan Gal*, Language Shift: Social Determinants of Linguistic Change in Bilingual Austria
- Ronald Scollon and Suzanne B. K. Scollon*, Linguistic Convergence: An Ethnography of Speaking at Fort Chipewyan, Alberta
- Elizabeth Bates*, The Emergence of Symbols: Cognition and Communication in Infancy
- Mary LeCron Foster and Stanley H. Brandes (Eds.)*, Symbol as Sense: New Approaches to the Analysis of Meaning
- Willett Kempton*, The Folk Classification of Ceramics: A Study of Cognitive Prototypes
- Charles Goodwin*, Conversational Organization: Interaction between Speakers and Hearers
- P. L. F. Heelas and A. J. Lock (Eds.)*, Indigenous Psychologies: The Anthropology of the Self
- Frederick Erickson and Jeffrey Shultz*, The Counselor as Gatekeeper: Social Interaction in Interviews
- Louise Cherry Wilkinson (Ed.)*, Communicating in the Classroom

C164A



Representation and Understanding

Studies in Cognitive Science

edited by

DANIEL G. BOBROW

*Xerox Palo Alto Research Center
Palo Alto, California*

and

ALLAN COLLINS

*Bolt Beranek and Newman
Cambridge, Massachusetts*



ACADEMIC PRESS, INC.

(Harcourt Brace Jovanovich, Publishers)

Orlando San Diego San Francisco New York London
Toronto Montreal Sydney Tokyo São Paulo

CONTENTS

I. Theory of Representation

1. Dimensions of Representation 1
Daniel G. Bobrow
2. What's in a Link: Foundations for Semantic Networks 35
William A. Woods
3. Reflections on the Formal Description of Behavior 83
Joseph D. Becker
4. Systematic Understanding: 103
Synthesis, Analysis, and Contingent Knowledge
in Specialized Understanding Systems
Robert J. Bobrow & John Seely Brown

II. New Memory Models

5. Some Principles of Memory Schemata 131
Daniel G. Bobrow & Donald A. Norman
6. A Frame for Frames: 151
Representing Knowledge for Recognition
Benjamin J. Kuipers
7. Frame Representations 185
and The Declarative-Procedural Controversy
Terry Winograd

III. Higher Level Structures

8. Notes on a Schema for Stories 211
David E. Rumelhart
9. The Structure of Episodes In Memory 237
Roger C. Schank
10. Concepts for Representing Mundane Reality in Plans 273
Robert P. Abelson

IV. Semantic Knowledge in Understander Systems

11. Multiple Representations of Knowledge 311
for Tutorial Reasoning
John Seely Brown & Richard R. Burton
12. The Role of Semantics 351
in Automatic Speech Understanding
Bonnie Nash-Webber

Contents

13. Reasoning From Incomplete Knowledge	383
Allan Collins, Eleanor H. Warnock, Nelleke Aiello, & Mark L. Miller	
Author Index	417
Subject Index	421