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conceptual information processing

r. c. schank

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CONCEPTUAL INFORMATION PROCESSING

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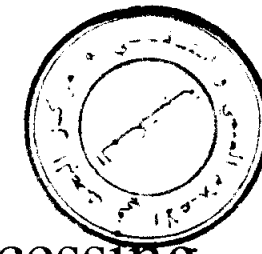

Conceptual Information Processing

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PREFACE

We discuss here a theory of natural language and the implementation of that theory on a computer. We have taken what is basically an Artificial Intelligence approach to linguistics. That is, it was our objective to write computer programs that could understand and generate sentences. The work is intended to be a first step towards the long range goal of a computer that can communicate with people in natural language.

This work started out as a theoretical endeavor, taken with the computer in mind, at Tracor Incorporated in Austin, Texas, while I was a graduate student in linguistics at the University of Texas. Later, work was begun on programming what we called a "conceptual parser" at the Stanford University Artificial Intelligence project, by Larry Tesler, Sylvia Weber and myself. When we realized that our conceptual parser was relying too heavily on syntax, we began a new theoretical effort. The theory of Conceptual Dependency was extended to make it less language dependent and allow it to serve as more of a basis for the programs which we intended to write. Most of this theoretical work was done in seminars which included: David Brill, John Caddy, Neil Goldman, Kay Green, Linda Hemphill, Charles Rieger and Christopher Riesbeck. The most recent phase has involved the writing of the actual programs. This was done principally by the authors whose work is presented here.

Initially, the work which we were doing was considered to be quite out of the mainstream of both linguistics and computational linguistics. In order to continue this project, it was necessary to be supported in odd ways. Consequently, we gratefully acknowledge those who were willing to encourage and support this work despite the fact that it was not necessarily of direct importance to their own projects. Particularly we

would like to thank Kenneth Colby, Jerome Feldman, Jacob Mey and Eugene Pendergraft, all of whose imprint is on this work in various ways.

Finally, some of us have spent this past year at the Institute for Semantics and Cognition, in Castagnola, Switzerland. We gratefully acknowledge the support of the Fondazione Dalle Molle which enabled us to write this book and expand the ideas within the theory.

Roger C. Schank

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