

BOOK REVIEWS

NATURAL LANGUAGE UNDERSTANDING AND LOGIC PROGRAMMING, II: PROCEEDINGS OF THE SECOND INTERNATIONAL WORKSHOP

Veronica Dahl and Patrick Saint-Dizier (eds.)
(Simon Fraser University and IRISA, University of Rennes 1)

Amsterdam: North-Holland, 1988, viii + 345 pp.
ISBN 0-444-70408-6, \$84.25 (hb)

Reviewed by
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This volume contains 18 papers and the positions presented at two panel sessions. The papers are rather heterogeneous and the editors have not classified them in any way.

The collection shows clearly the fast proliferation of new logic grammars and Prolog dialects, which is perhaps a necessary stage for a relatively new domain. Some of the modifications are small enough to be fully described in short Prolog listings accompanying the papers, e.g., the functional logic grammar of Michel Boyer or the epistemic reasoning of Manny Rayner and Sverker Janson; in other cases we have quite large systems practically unavailable to other parties, e.g., the three parsers compared by Toshiyuki Okunishi and his colleagues. Some papers take a specific linguistic theory or formalism as a starting point, e.g., Government-Binding theory or Sowa's Conceptual Graphs, while others augment existing logic grammar or programming tools. A paper on morphological analysis of Italian is an example of the work where it is fully justified to use Prolog, but its use is of little relevance to the problem under consideration.

According to my understanding of logic programming, three papers are most representative of the domain. Patrick Saint-Dizier describes Contextual Discontinuous Grammars, which form the next step in the evolution of logic grammars started by Colmerauer's metamorphosis grammar. Secondly, Edward P. Stabler, Jr. reconstructs in logic a fragment of a linguistic theory, namely, Government-Binding theory, and transforms it by formally provable steps into a logic program for parsing. Last but not least, the paper by Annie Gal and Jack Minker on informative and cooperative answers in data bases shows the advantages of using the same formalism for representing database integrity constraints and natural language semantics.

As for the panels, I sympathize most with Miguel Filgueiras ("logic programming can only be seen as a

programming methodology and not as a formalism contributing to the study of natural language understanding") and Stan Szpakowicz ("the belief in Prolog as a perfect tool for natural language processing may sometimes mean putting the cart before the horse") but they seemed to be in a minority.

To summarize, the volume definitely proves the usefulness of the Prolog programming language for a wide range of natural language processing tasks. It gives the reader a fair account of the activities in the domain, but leaves also some doubts as to whether the domain is more coherent than, say, natural language understanding and Lisp programming.

Janusz S. Bien, received his Ph.D. in computer science from Warsaw University in 1978. He has recently worked on a computational description of Polish morphology. He advocated the use of Prolog for natural language processing from the moment the first implementation became available outside Marseilles. Bien's address is: Instytut Informatyki UW, PKiN p. 850, 00-901 Warszawa, Poland.

LANGUAGE AND SPATIAL COGNITION

Annette Herskovits
(Wellesley College)

Cambridge, England: Cambridge University Press,
1987, x + 208 pp.
(Studies in natural language processing)
ISBN 0-521-26690-4, \$34.50 (hb) [20% discount to
ACL members]

Reviewed by
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In this book, Herskovits proposes an analysis of locative expressions in English. Her goal is to position the study of linguistic expressions (in particular, spatial expressions) within a broader context of language usage and the conventions associated with communicating goals, beliefs, etc. Thus the work should be evaluated from the perspective of cognitive science as an interdisciplinary field, and not simply as a linguistic treatise on prepositions or a computational model of a subset of natural language.

The underlying semantic theory that Herskovits assumes differs from more traditional "classical" approaches to meaning (e.g., Tarski 1943) and is most similar to the positions argued for by Searle (1979) and Winograd (1980), and previously by Wittgenstein (1963). According to these authors, the view that meaning derives from the literal interpretation of the words in