Lexical Semantics and Knowledge Representation

Proceedings of a Workshop Sponsored by the Special Interest Group on the Lexicon of the Association for Computational Linguistics

Edited by James Pustejovsky and Sabine Bergler

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Preface

The recent resurgence of interest in lexical semantics (LS) has brought many linguistic formalisms closer to the knowledge representation (KR) languages utilized in AI. In fact, some formalisms from computational linguistics are emerging which may be more expressive and formally better understood than many KR languages. Furthermore, the interests of computational linguists now extend to include areas previously thought beyond the scope of grammar and linguistics, such as commonsense knowledge, inheritance, default reasoning, collocational relations, and even domain knowledge.

With such an extension of the purview of "linguistic" knowledge, the question emerges as to whether there is any logical justification for distinguishing between lexical semantics and world knowledge. The purpose of this workshop is to explore this question in detail, with papers addressing the following points:

- 1. Possible methods for determining what is lexical knowledge and what is outside the scope of such knowledge.
- 2. Potential demonstrations that the inferences necessary for language understanding are no different from supposed non-linguistic inferences.
- 3. Arguments from language acquisition and general concept development.
- 4. Cross-linguistic evidence for the specificity of lexical semantic representations.
- 5. Philosophical arguments for the (impossibility of the) autonomy of lexical knowledge.
- 6. Theoretical approaches and implemented systems that combine lexical and non-lexical knowledge.

The current volume contains the written versions of the papers and panel positions presented at the (first) workshop on *Lexical Semantics and Knowledge Representation*, held at the University of California, Berkeley, on June 17, 1991, in conjunction with the meeting of the 29th Annual Meeting of the Association for Computational Linguistics.

James Pustejovsky Chair, Program Committee

Acknowledgements

The organization of a special interest group within the ACL on the lexicon (SIGLEX), has occasioned the sponsoring of workshops such as the one presented here. There are many people to thank for making this workshop possible, and for helping to see the proceedings out the door. Special thanks must first go to Don Walker and the executive committee of the ACL for making SIGLEX official. Secondly, I would like to thank the other members of the program committee, Bran Boguraev, Ulrich Heid, Peter Norvig, and Robert Wilensky, for organizational and reviewing help. I would also like to thank Sabine Bergler for extensive help with preparing the manuscripts for publication. Finally, Peter Norvig and his staff deserve particular mention, for procuring the room, food services, and other local arrangements.

LEXICAL SEMANTICS AND KNOWLEDGE REPRESENTATION

17 June 1991 University of California Berkeley, California, USA

A workshop sponsored by the Special Interest Group on the Lexicon (SIGLEX) of the Association for Computational Linguistics

FINAL PROGRAM

Opening session (chair: James Pustejovsky) 9:00-9:10 Opening statement (JP) 9:10-9:40 Keynote address: Knowledge Representation and Knowledge of Words Richmond Thomason 9:40-9:55 discussion

Session 1 (chair: James Pustejovsky)
9:55-10:15 Syntax-Driven and Ontology-Driven Lexical Semantics Sergei Nirenburg and Lori Levin
10:15-10:35 Knowledge Management for Terminology-Intensive Applications: Needs and Tools Ingrid Meyer
10:35-10:55 Interpretation without Semantics

Stephen Helmreich

10:55-11:10 coffee break

Session 2 (chair: Robert Wilensky)

11:10-11:30 Logical Structures in the Lexicon

John Sowa

11:30-11:50 Conventional Metaphor and the Lexicon

James Martin

11:50-12:10 Representation of Semantic Knowledge with Term Subsumption Language Gerrit Burkert and Peter Forster

12:10- 2:00 lunch

Session 3 (chair: Peter Norvig)
2:00- 2:20 Predictable Meaning Shifts: Some Linguistic Properties of Lexical Implication Rules Nicholas Ostler and B.T.S. Atkins
2:20- 2:40 Lexical Operations in a Unification-based Framework

Ann Copestake and Ted Briscoe

2:40- 3:00 Lexical Structures for Linguistic Inference

Peter Anick and Sabine Bergler

3:00- 3:20 In So Many Words: Knowledge as a Lexical Phenomenon Willem Meijs and Piek Vossen

3:20- 3:35 coffee break

Session 4 (chair: Bran Boguraev)

3:35- 3:55 Redefining the 'Level' of the 'Word'

Melissa Macpherson

3:55- 4:15 Semantic Emphasis and the Structure of Verb Fields Juergen Kunze

4:15- 4:35 Lexical and World Knowledge: Theoretical and Applied Viewpoints John White

4:35-4:55 Aspectual Requirements of Temporal Connectives: Evidence for a Two-level Approach to Semantics

Michael Herweg

4:55- 5:10 coffee break

Session 5 (chair: James Pustejovsky)

5:10- 6:30 Roundtable Discussion: Acquisition and Reusability of Lexical and World Knowledge Martha Evens, Nicoletta Calzolari, Martha Palmer, Eiji Yokota, Tomoyoshi Matsukawa 6:30- 6:50 discussion

6:50-7:00 closing (JP)

Alternate Papers:

Presupposition and Default Reasoning: A Study in Lexical Pragmatics Robert Mercer Lexicon, Ontology, and Text Meaning Boyan Onyshkevych and Sergei Nirenburg A Two-Level Knowledge Representation for Machine Translation: Lexical Semantics and Tense/Aspect Bonnie Dorr The Autonomy of Shallow Lexical Knowledge Kathleen Dahlgren

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